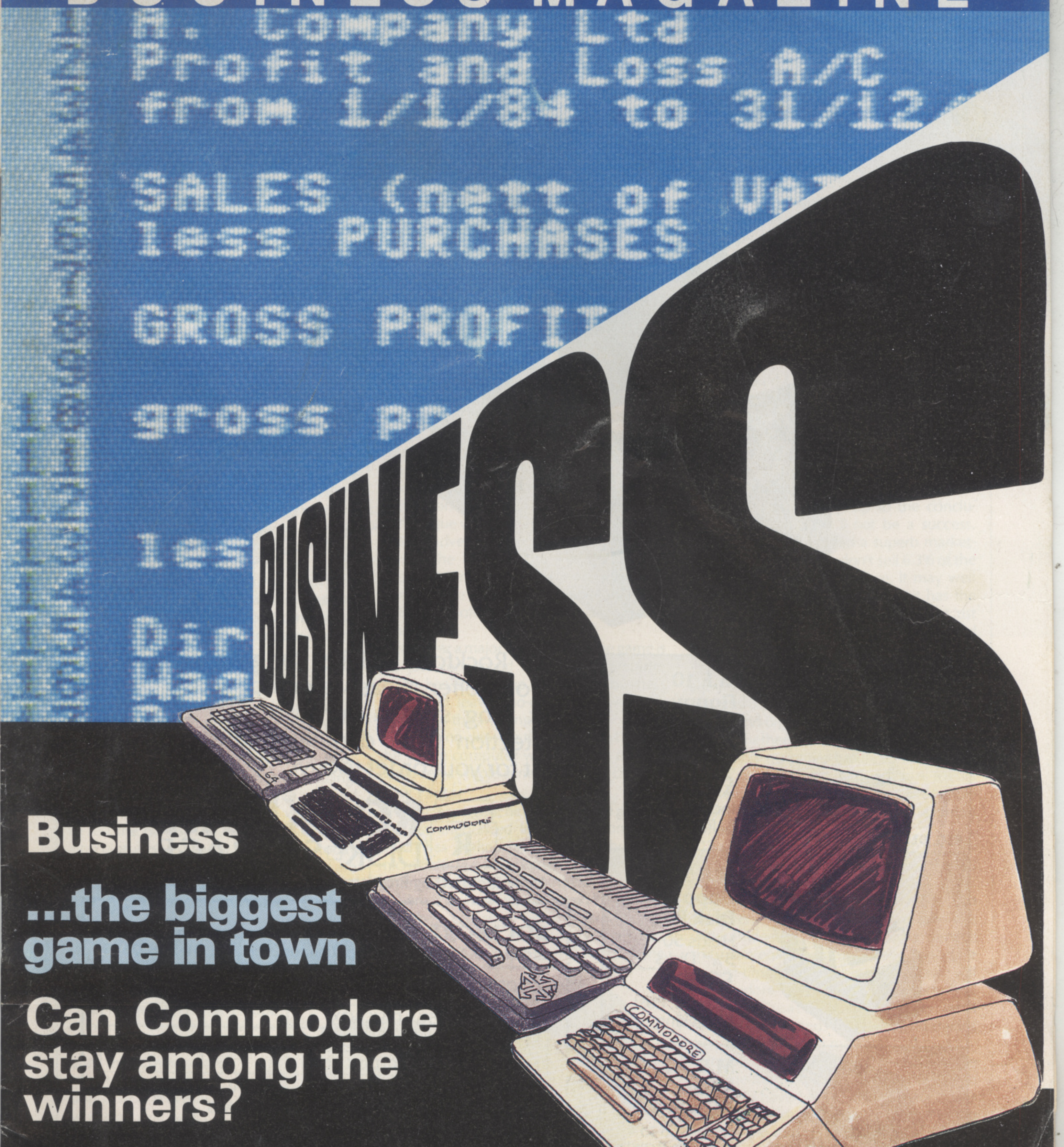
COMMODORE

COMPUTING INTERNATIONAL/NOVEMBER 1984

BUSINESS MAGAZINE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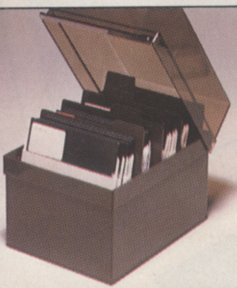

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In this issue:
First Impressions, the new 8296D ... Battle of the Business Micros ... Disk Drives ... Word Processing, a Checklist ... Business Packages ... Commodore Profiles – Gail Wellington and Nick Green ... and the New Communication Revolution ...

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First Impressions

The new 8296D is being widely advertised but is noticable for its absence for retail buyers. Even CCI had difficulty in obtaining a model to review. When it arrived we were not a little impressed. It is an attractive object of design. We decided however to give the full examination of the computer a realistic form by making use of it in our normal routine – it is often unfair to seek out faults or virtues that would not be usually noticed in our standing working environment. Our in depth working test will appear in the next issue of Commodore Business. In the meantime here are our first impressions.

The 8296D would shame no rising executives desk. Designed by Porsche – yes the car company – it has confident style and an agreeably futuristic look, especially the screen.

The disk drives are not so up-to-date, indeed have a rather old fashioned sealing. the keyboard has a crisp attractive look and is ergonomically well-designed with room to rest the hands. The keys themselves are 'unsculptures' – against the fashion today and although the numbering and letters are clear and bold, the typestyle in prosiac and they tend to be noisy and clatter slightly in use.

The 'Insert/Delete' seems to close the Run/Stop key and could be a problem for careless typers. And, while the screen has brightness, it has no contort control.

Our impression is that it is one of the most attractive business micros on the market and the coveats are minor. We were impressed. Whether it works as well as it looks well, read the next installment...

The Battle for the Business Micro

In business, nothing is deader than yesterday. Or yesterday's computer. In the highly competitive world of business, the demand for the latest model, the most efficient system, that extra edge of software cost-effectiveness is brutally Darwinian; even the newest or the fittest has to struggle furiously to survive. Today's publicised launch can turn so quickly into tomorrow's discreet wake.

Commodore – the creator of the first business micro, the 700 series PET – has launched a major marketing campaign to recapture its original place. It will spend more than £6 million over the next year – a substantial proportion devoted to business – to keep and increase its market share.

The spearhead of its business drive is the new 8296D – covered on this page. But is the 8296 a machine that can put Commodore up with the winners in the fiercely combative, if highly profitable, business game? Or is the 8296, as some detractors claim a 'yesterday' machine – too slow, too small and too late?

Commodore is basing its marketing strategy on 'knocking copy' – comparisons; a technique widely used in the car business. Its 8296 advertisement points out a checklist against the IBM PC, the Apricot and the Apple Macintosh. They clearly show the Commodore 8296, at around £1500.00 including software, substantially better value.

However a major new factor in the game is the just announced IBM PC/AT computer which has shaken up the whole business micro field, leaving no-one certain what will emerge as the winning formula.

There is no denying that when IBM moves the whole computer world shakes and we could see a whole series of related changes

New Factor

However a major new factor in the game is the just announced IBM PC/AT computer which has shaken up the whole business micro field, leaving no-one certain what will emerge as the winning formula.

There is no denying that when IBM moves the whole computer world shakes and we could see a series of related changes that could push the small business micro – the 8296 field – down below the £1000.00 mark.

What has happened is that IBM AT has caused the price differential of the floppy and hard disk based systems to be dramatically reduced and the knock-on effect will be that the floppy systems must become cheaper either through manufacturers setting lower prices or simply market forces bringing heavier discounts.

The scenario is that the IBM PC/AT is a 16 bit, floppy and hard disk based system with 256KB of memory, 1.2MB of floppy disk and 20MB of hard disk capacity, selling at around £4500.00, which will bring the earlier IBM PC down to around £2000.00 and make a standard CPM or MS DOS retail for about £1500.00 at which the 8296 is presently priced.

Why should Commodore come down in price? Because the 8296 technology is not the newest; it is an 8 bit, floppy disk with about 1/10th the capacity of the new IBM. Another problem is the relatively limited amount of software presently running on it.

Superb Marketing

Nevertheless, don't jump to the conclusion that the 8296 will not be a success. Commodore has proven a superb marketing organisation – you don't sell 6.3% of the world's computers by chance. It may well convince the business public, as it has the home market, that its machines suit not just their budgets but also have the capacity and speed they want.

No-one, not even IBM, is presently certain about the supply or the price of the new AT. The Intel 80286 chip used in it is in very short supply and Big Blue is having to produce its own. Whether the AT can be supplied in reasonable quantities before well into 1985 seems doubtful and IBM, famous for its marketing muscle, seems to be more fallible recently. It had a disaster with the failure of its Peanut micro to sell in the U.S.

The key to the battle may be with the software that Commodore can get for its 8296 and the support it provides.

Business software is very much more than just a network of dealers vending boxes. It requires close attention to training, service and maintenance; all especially important to first-time business buyers. How will Commodore approach these aspects and can it equate the product with businessmen's needs that are by no means the same as its usual market?

Undoubted excellence of product, acute judgement of timing and price and its superb marketing have kept Commodore a major winner. But slugging it out with IBM in the fight for the business micro market is a big step up in class. As Commodore no doubt

Commodo

A matter of choice

The type of printer that you buy should be determined by the work for which you require it.

If its use is to be primarily private, producing listings and internal reports, the chances are that you will be able to get away with buying nothing more than an ordinary dot matrix printer. The quality of the output will not be outstanding, but will certainly be legible; and a good dot matrix should be able to whizz along at speeds well in excess of 100 characters a second.

If the printed material is to be seen by anyone other than yourself; for instance, in a company using the printer as part of a word processing system, you will probably have to spend rather more money and be prepared to put up with a slower but higher quality, daisy wheel printer.

As ever, you pay your money and take your choice.

Commodore's own printers range from a relatively inexpensive dot matrix printer to a more expensive daisy wheel printer. The speed of the latter device has left some people thinking that they could type faster themselves.

Early Commodore computers, before the Vic 20 and the 64, had an unusual version of an IEEE interface which linked to many standard printers.

Owners of Commodore 64s and Vic 20s today are in a less fortunate position; the interface provided on those two computers is compatible with nothing other than Commodore's own peripherals.

If you don't want to go to the expense of buying various interfaces, but don't want to use Commodore printers, look at Ibek Systems. They have just brought out a daisy wheel printer called the Sanple Daisy Step 2000 which plugs directly into the 64.

IBEK. Tel: 0203 661162.

Dot matrix printers

Few printers, other than Commodore's own, will allow you to reproduce the graphics character sets found on the actual computer, although most of them will allow you to define characters and produce, for

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ore Printers

example, dot by dot copies of the screen. However, this requires some software to be written by you, the user, so we'll stick to straightforward printers, starting with the DRH 136, which can operate in either RS232 or Centronics modes.

The DRH 136, distributed by Triumph Adler (27 Goswell Road, London EC1, on 01-250 1717), is a 120 characters per second (abbreviated from now on to CPS) printer, with the ability to print bi-directionally. The number of characters printed per line is software selectable, and can range from 136 to 224, although this latter mode is the type that requires an extremely powerful magnifying glass.

Many character sets are available with this printer, but at a price of £675, you may care to take a look at the slower, but cheaper, DRH 80/81.

Again from Triumph Adler, this is down to 80 CPS, but only costs £540. Apart from only having a 140 column line at maximum, the only real difference between this machine and its big brother, the DRH 136, is the print speed, and, of course, the price.

Cheaper still, at £498, is the Facit 4510 from Facit-Addo Limited (Maidstone Road, Rochester, Kent ME1 3ON. Telephone 0634 401721). This is a 120 CPS dot matrix printer, with a column width of up to 80 characters, which is switchable down to 12 columns, should you so desire it.

There is a broad range of character sets available, and also a number of different print modes, including condensed and compressed. This can be linked up to either Centronics or RS232 interfaces.

Epson have long held a reputation for producing good, cheap, dot matrix printers, and the latest printers from them have done nothing to harm a hard-earned reputation.

The RX-80-FT is a 100 CPS printer with a variety of typefaces and sizes, supplied with a Centronics interface (although this can be converted into either IEEE or RS232 if required), and capable of taking either friction feed or tractor feed.

At just £319, this is worth considering, as is its slightly more expensive big brother the FX80.

This costs £438, but has the ability to print at almost twice the speed (160 CPS), and produce near letter quality output.

Epson (Dorland House, 388 High Road, Wembley, Middlesex HA9 6UH. Tel: 01-902 8892).

The price of speed

Possibly the fastest dot matrix printer that is readily available for any Commodore computer is the DRS 250, again from Triumph Adler. This races along at of 250 CPS, and comes complete with either an RS232 or a Centronics interface.

However, if the computer that you own is a Vic 20 or a Commodore 64, there seems little point in paying around £200 for a computer, and then paying out another £1,495 for the printer to go with it.

If you're extremely rich, obviously the DRS 250 has a lot to recommend it. If you're like the rest of us...

▷

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Compatibility with the Commodore is achieved by means of the Small System Hardbox controller. With a hardbox at each work station, up to 16 Commodores can share a single drive, with each user having separate secure work areas and the ability to pass files between micros.

Interfaces are available to allow not only Commodore business micros but also most other popular micros to share the same disk drive. Micros currently supported include Apple Macintosh, Apple II and III, IBM PC and compatibles, Epson QX, TI, Victor/Sirius, Future, Zenith and Apricot.

For further information on the Sunol range of Winchester disk drives, phone Jane Teather or Simon McCarthy on 328 7145, or just fill in the coupon.

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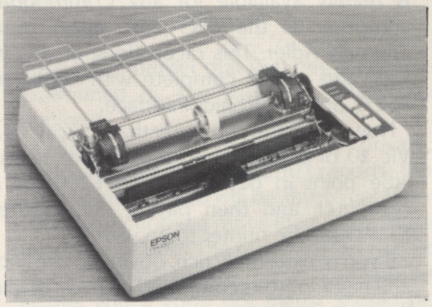
Epson FX-100 is the latest and greatest dot matrix printer to come out of the Epson stable, certainly if the specification sheets hold true.

has, including the 160 CPS print speed, optional interfaces of every kind, and superb graphic facilities. It also has a much wider carriage.

A sleek little number that should sell by the thousand.

The Integrex CX 80, which looks like an early Commodore printer, prints at 55 lines per minute (although to be fair it can print at 125 CPS in certain special cases, such as printing line after line of the same character), and with a Commodore-compatible IEEE interface will set you back some £845.

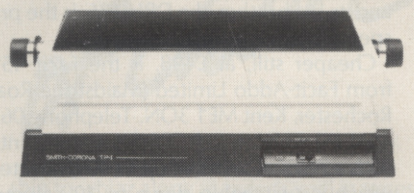
As a pure graphics printer it has many advantages over other conventional dot matrix printers, for it has a choice of printing in seven different colours, and a dot-addressable print facility (try also Commodore's own graphics printer). However, program listings in high resolution printed in seven different colours tend to look a little weird. *(D.N. Computer Services, West Croft Industrial Estate, Manchester Old Road, Rhodes, Middleton, Great Manchester M24 4PJ, or telephone 061-643 0016.)*



Mannesman Tally produce, among others, the MT80, which is a £217 Commodore-compatible 80 CPS dot matrix printer. They seem to have gone all out to be compatible with anything else currently available, as it can handle all the Epson codes, as well as having a number of its own. Any one of many different interfaces can be hooked up to this one. It is also very quiet, a boon for many small offices. *(Tel: 0734 791619.)*

Daisy Wheel Printers

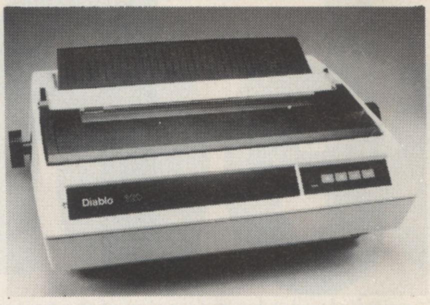
Triumph Adler, produce possibly the cheapest daisy wheel, the TRD 170-S, which costs £725. This is not the fastest of printers, at just 17 characters a second, but it is of a high quality, and it is also quiet. A maximum of 198 extremely small characters can be printed across a line, and with a whole range of optional interfaces, covering Centronics, Qume and RS232, it should be able to be linked up to just about anything.



Faster, at 55 CPS, but more expensive at £1,675, is the DWP 5055, from the same company. Many advanced features, including double print, bold print, underlining, printing up to 163 characters per line, and so on, make this a versatile and fast daisy wheel printer. Not many models under £10,000 will print as fast as this one.

A company producing a whole range of daisy wheel models, including one at just £475 is Geveke Electronics. However, the Getex D-14 won't win any sprints, as it produces its letter quality output at the yawn-inducing rate of 13 CPS. Still, you can print in either red or black, and a large print buffer compensates somewhat for the slow speed by freeing the computer to get on with more work while everything is being printed out.

Geveke Electronics *(Vale Farm Road, Woking, Surrey GU21 1DW, or telephone 04862 26331)*, also produces the Diablo 620 RO at £975 and the Diablo 630 API at £1,650. These two are fairly similar, printing at 25 CPS and 40 CPS respectively, and include various font sizes, character widths, margin controls, and so on. RS232 interfaces are available on both models, but the latter scores in its graphic abilities, using Diablo's Hyplot vector plotting. Useful for business programs with bar charts and histograms.



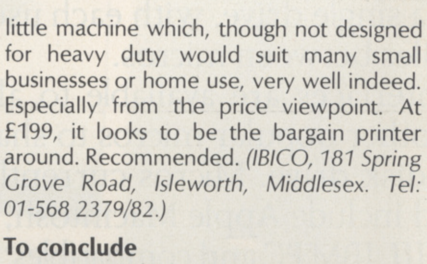
Quick Round Up

There are many other daisy wheel printers available, including the Olympia ESW 3000 RO, from Intelligent Interfaces Ltd. *(436 Wood Street, Stratford-on-Avon, Warwickshire CV37 6JQ, or telephone 0789 296879)* at £1,136.

Smith Corona are another commonly encountered name, and their extremely cheap (£346) 120 words a minute TP-1 model has already earned them many friends. *(Discom Trading Company, Dresden House, 51 High Street, Evesham, Worcestershire WR11 4DA, or telephone 0386 3591.)*

At a shade under £400, is the Bytewriter from the same Discom Trading Company. This normally comes with a Centronics interface, however you can get a Commodore-compatible IEEE interface fitted if desired. Although it has a slow print speed of just 8 to 12 CPS, it has one feature which, at this price, is truly amazing. It is also a typewriter, having a full travelling keyboard fitted to it. Since it only weighs 21 pounds, it also becomes portable rather than transportable!

And finally, just on the market is the letter quality IBICO LTR-1 which is compatible with the Commodore 64. This is a delightful little machine which, though not designed for heavy duty would suit many small businesses or home use, very well indeed. Especially from the price viewpoint. At £199, it looks to be the bargain printer around. Recommended. *(IBICO, 181 Spring Grove Road, Isleworth, Middlesex. Tel: 01-568 2379/82.)*



To conclude

We've covered a reasonable range of printers, from the surprisingly cheap to the eyebrow-raising expensive, with print speeds going from snail's pace to lightning fast. Decide the purpose and then make the choice.

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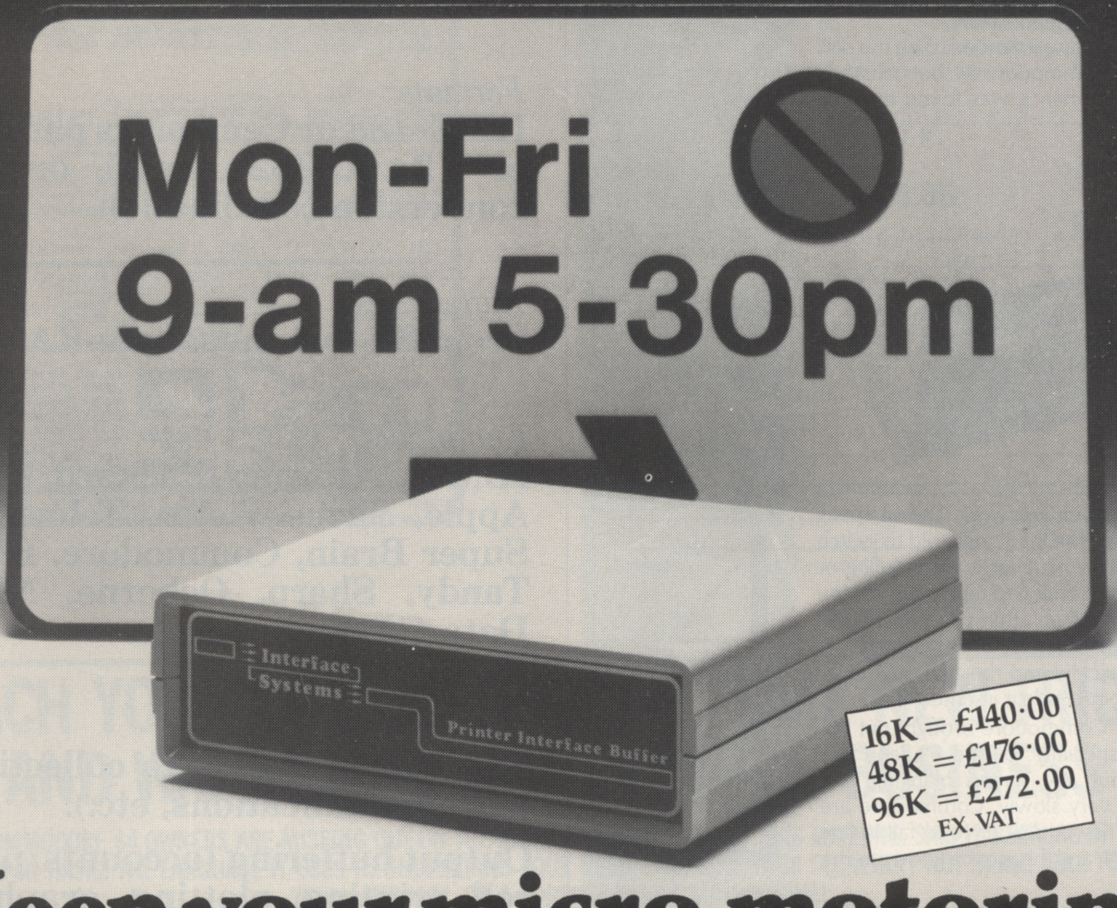

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DISK DRIVES

BUSINESS SCALE STORAGE

There are two disk drives for the Vic and 64 which plug directly into the serial port of the machine. Both are available from Commodore.

The 1540 was for a long time the only one available, and this is a 170K single unit, with, it is claimed by Commodore, an access time to anywhere on the disk of just two seconds. Well, it may find it in two seconds but it takes a much longer time to load it.

The 1540 was also intended to be the disk drive for the Commodore 64, but consternation reigned when it was found that the drive simply would not work. The 64, being a delicate machine, had been told to switch the screen off whenever it was loading or saving any information to tape. This had the side effect of, when attempting to use the 1540 disk drive, getting the information in much too quickly, and the poor old chips just could not decode it in time.

commodore
CBM
Model 8050
dual drive
floppy disk
Drive 1
Drive 0

In the end, Commodore brought out the 1541 drive specially for the 64, and this works without any screen blanking, but again works very slowly. Commodore are promising a newer disk drive to fall in line with the Plus 4, and this is to be known as the 1542.

Faster disk drives can be used with an IEEE interface, but the only other disk drives which anyone should seriously consider are Commodore's own earlier drives for the PET range of microcomputers.

All of these (with the exception of the 2031 drive) are double disk drives, and on the 8050 model can hold up to half a megabyte on one disk. However, since the 8050 is about four times the price of a 64, it makes little sense to buy it unless you're a serious, and wealthy, computer user.

The Vic and the 64 can link up to a 7.5 megabyte hard disk, using one of the IEEE interfaces, at a cost of some £2,495. Now that is computing gone mad!

Other manufacturers

Audiogenic are talking about bringing out a fast tape system, and it's worth dropping them a line to find out their latest developments. P.O. Box 88, Reading, Berkshire.

Also talking along similar lines are Cumana. Describing their unit as a 'floppy tape', Cumana can be found at Pinnes Trading Estate, Broad Street, Guildford, Surrey.

For the other Commodore machines, you can easily use the aforementioned 8050 and 8250, but they may be a little hard to find.

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PROFILE

Gail Wellington

Managing Commodore's Software World

I well remember the time when Gail Wellington came to join Commodore Business Machines. The software department at Commodore had been going through a strange period: disk drive sales were booming, Commodore was very big on the business side of things, but for some months cassette based software had been outselling disk based stuff, and most of those cassettes were games as well.

The software department in those days was rather like a football team of talented individuals without a leader. Plenty of people from that department have gone onto great things, some sat it out and are still there now, but what the department didn't have for a long time was that leader figure. Mike Whitehead had tried, and then left to help make the Bristol Software Factory a great success with Silicon Office. Rod Wellburn had tried, although he now seems to concentrate more on communications packages rather than straightforward software.

Then along came Gail. She didn't join as software manager. At first her role was to write and help supervise the production of manuals. She produced one massive manual, the size of War and Peace, which was all about manual writing, and sent several copies out to other writers for their opinions. After the fashion of Commodore then (but not now) I believe she got just one back.

Undaunted, the manuals began to appear, and Commodore's love affair with a program called The Manager began at the same time. The Manager manual was Gail's first effort, and sad to say she and I fell out over that because I thought it was dreadful, and said so in a magazine article in an early issue of Commodore Computing International.

Happily, after a recent meeting up at the Personal Computer World Show, we seem to be talking again!

Gail became software manager, and many changes were made. Some people (whom it would be unkind to name) were made to work a darn sight harder than they had been doing, and gradually things fell into line. Products began to appear, and the U.K. branch of Commodore is now the leading software department of any branch of Commodore in the world. Not bad for a couple of year's work.

None of the software produced by Commodore is written in-house. Under Gail's watchful eye, all the programs that are submitted on tape or disk are checked for suitability, and if found lacking returned with an evaluation sheet detailing the faults.

If successful, and only about 5 per cent of programs are, then the Commodore marketing machine goes into action, and the program hits the streets. Many different types of programs come in, from strategy and adventure games to educational and business packages.

Business world

The signs are now that, after a couple of years in the doldrums in the business world, Commodore are planning a comeback, with new software and new machines.

The first software item that heralded this change was the Magic Desk, Commodore's software answer to Apple's Lisa. Seen only in prototype form so far, and likely to be released as Magic Desk II when it's finally ready, this program should go a long way to getting Commodore back where they want to be: on top.

Certainly if Gail has anything to do with it we'll be seeing better business software for the new Plus 4 than is currently included with it.

With Gain in charge, we can hope for better things, soon, for this and other machines. She's a busy woman, and no doubt going to get a lot busier in the months to come!

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"Word processors: why change?"

Below in this business magazine you'll find a word processor checklist that covers most of the popular word processors available at present. You might see, if you look through it, that the word processor that you're using at present doesn't have all the features of some of the rest, and feel sorely tempted to ditch your current program and rush out and buy something else.

I have personally been using the same word processing package for almost two years, and in that time there have no doubt been improvements to it, and equally as likely there have been new programs released that far outshine it in terms of performance and capability.

Reasons to be cheerful

Like any serious user of word processors, I have built up a vast collection of disks and tapes with word processor files on them, and one major reason for not changing would be that any new program I might acquire is extremely unlikely to be able to load and process these old files: two years work up the creek.

Also, the word processor that I use has many features on it that I'm likely to miss by going to another program. For instance, part of my work involves creating indices for books, and as everyone knows indices have to be in alphabetical order.

Similarly, there are many times when using the program that I would like to perform a simple mathematical sum. Short of switching off the machine, working out the answer, switching it back on again, loading in the word processor and starting all over again, many programs would require you to go out and buy a calculator.

There are other things that I would like to see in the program. Additional and subtraction are one thing, but it can't cope with multiplication or division (well, not easily anyway). However, if I were to change programs and go to one that could do this, I'm sure that there are many other features that I take so much for granted that I can't even think of them which would be sorely missed.

Conclusion

The point of this little tale is that if you're happy with the program you're using, don't feel tempted to rush out and change it for another, newer one. Like a man swapping his favourite old car that he knows inside out for a new one that he doesn't, you're almost bound to regret it.

Word Processing — Comparing Packages

	PAGEWRITER	PAPERMATE+	SUPERSCRIPT	WORDPRO 4	SIMPLY WRITE	WORD WIZARD	WORDCRAFT 40	THE WORP	VIZAWRITE	EASYSCRIPT
PRICE	£39 + Vat	£45 + Vat	£249 + Vat	£395 + Vat	Tape £35 + Vat Disk £40 + Vat	£6.99	£89.95 (cartridge)	£195.60 + Vat	£79.95 (disk) £89.95 (cartridge)	£75
AVAILABLE FROM	SUPERSOFT	SUPERSOFT	PRECISION SOFTWARE	PROFESSIONAL SOFTWARE INC./WEGO	SIMPLE SOFTWARE	BUBBLE BUS	AUDIOGENIC	IMPEX DESIGNS UK LTD	VIZA SOFTWARE	COMMODORE MARKETING
SUPPLIED AS	2K ROM	TAPE OR DISK	DISK	DISK	TAPE OR DISK	TAPE	8K ROM	DISK	DISK OR CARTRIDGE	DISK
LANGUAGE	M. Code	Basic & M. Code	M. Code	M. Code	M. Code	M. Code	M. Code	M. Code	M. Code	M. Code
BASIC 2/3/4	Yes	Yes	Yes	Yes	Yes	4 only	Yes	No	Yes	–
Max. TEXT (A4)	3 pages	9 pages	5 pages	5 pages PER SCREEN AREA	8 pages	1 page	20 pages	20 pages	Unlimited	16 pages
TEXT LINKING	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
MEMORY COUNTER	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	–
PRINTER	CBM PREFERRED	Any	Any	Any	ASCII Any	Most	Any	Any	Any	Any
PRINTER COMMANDS	Only Character mode	Fiddly	Yes	Yes	Yes	–	Yes	Yes	Yes	Yes
Adj. PAGE SIZE	Only at turn on	Yes	Yes	Yes	Yes	Yes—Fast down to printer	–	Yes	Yes	Yes
PAGE NUMBERING	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes
DOUBLE SPACING	Manually	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MARGINS	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R. JUSTIFYING	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
TABULATION	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CENTERING	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
KEYBOARD DEFINABLE	No	Yes	No	No	Yes	–	–	No	Yes	Yes
EDITING	Limited	Fiddly	V. Good	V.V. Good	Good	V. Good	Excellent	V. Good	Excellent	V. Good
FIND WITH REPEAT	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
FIND WITH CHANGE	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
MOVE TEXT BLOCK	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WORDWRAPPING	No	Sometimes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
PRINTOUT REVIEW	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MULTIPLE COPIES	Up to 9	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
FORM LETTERS	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TAPE USE	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes
DISK USE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DISK COMMANDS	No	Basic 4 only	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TEXT SAVED AS	Basic Prog	Seg file	Basic Prog	Basic Prog	Seg file	Basic Prog	Relative file	Seg file	Seg file	Bagic Prog
NUMBER OF COMMANDS	Low	V. High	High	High	High	Moderate	V. High	High	V. High	High
EASE OF USE	Good	Fair	V. Good	Good	V. Good	V. Good	V. Good	V. Good	V. Good	V. Good
KNOWN BUGS	None	Stack overflow	None	None	None	None	None	None	None	None
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Numbering Structure		No Limit				9 Digits	8 Digits
Balance Forward or Open Item		Open Item		Open Item		Open Item	Balance Forward
Produces Statements		YES		YES		YES	YES
Produces Commission Statements		YES		NO		NO	NO
Produces Aged Debts		YES		YES		YES	NO
Produces Day-book Listings		YES		YES		YES	YES
Produces VAT Listings		YES		YES		YES	YES
Produces Name & Address Labels		YES		YES		YES	NO
Produces Full Customer Print		YES		YES		YES	YES
Produces Analysis Reports		YES		YES		NO (Covered under Nominal Ledger)	YES
Number of Customers per Disk		Depends on Memory		75 per File		200	700
Number of Transactions per Disk		Unlimited		750		1,200 Inc. Invoices	3,500
Number of Invoices Held		Unlimited		10 per customer		See Above	600
PRICE		£91.95 Codewriter. £28.95 Elf System. £34.95 Firewriter.		£40		£119.50	£27.95 cassette. £29.95 disk.
STOCK CONTROL NAME:	✓	✓	✓ Micromagpie	✓	✓	✓	✓
Numbering Structure	Alpha Numeric	No Limit	Alpha Numeric	Alpha Numeric	–	16 Digit Alpha Numeric	Alpha Numeric
Number of Prices that can be Listed per Item	2 cost and selling	No Limit	2 cost and selling	2 cost and selling	2 cost and selling	2 cost and selling	2 cost and selling
Capacity for Description	35 characters	No Limit	20 characters	28 characters	22 characters	30 bytes	33 characters
Unit(s) of Measure	Not Pre-set	No Limit	£ Value & Quantity	Numeric	Numeric	–	Doesn't Distinguish
Capacity for Supply Numbers	YES	YES	YES	YES	NO	NO	NO
Capacity for Supplies Reference	YES	YES	YES	YES	YES	NO	YES
Capacity for Last Cost Price	NO	YES	NO	YES	NO	NO	NO
Capacity for Balance at Start of Period	YES	YES	YES	YES	NO	NO	NO
Capacity for Balance at End of Period	YES	YES	YES	YES	NO	NO	YES
S.C. Capacity for Current Activity	YES	YES	YES	YES	NO	NO	–
Capacity for Year to Date Movements	YES	YES	YES	Period Movement	NO	NO	YES
Number of Transactions per Disk	550 Stock Items – unlimited transactions	Unlimited	1,500 Stock Items – unlimited transactions	128 products per file – unlimited transactions	220	500 stock lines	–
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Generates System Numbers		YES		YES		YES	NO
Calls Up Delivery Addresses		YES		YES		YES	NO
Number Of Lines Per Invoice		No Limit		15		Not Pre-Set	6
Discounting Done By Line or Invoice Total		EITHER		TOTAL		EITHER	TOTAL
Provides for Settlement Discounts		YES		NO		NO	NO
Provides for Carriage and Postage Charges		YES		YES		Can key in as an item	YES
Has Message Facility		YES		YES		YES	YES
Number Of Transactions Per Disk		Unlimited		500		1,200	600
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Balance Forward	Open Item	EITHER	EITHER		EITHER	EITHER	OPEN ITEM	
NO	YES	YES	YES		YES	YES	YES	
NO	NO	NO	NO		NO	NO	NO	
YES	YES	YES	YES		YES	YES	YES	
YES	YES	YES	YES		YES	YES	YES	
YES	YES	YES	YES		YES	YES	YES	
YES	NO	YES	YES		YES	YES	YES	
YES	YES	YES	YES		YES	YES	NO	
YES	YES	YES	YES		YES	–	YES Over Sales Area	
500	550	5,000	2,400		1,000 3,000	1,000	220	1,000
500	2,000	10,000			7,500 2,500	1,200	–	–
500	500	5,000	7,000				13 inv. per customer	15 inv. per customer
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✓	✓	✓	✓	✓	✓	✓	✓ 64	✓ 8000
8 Digit Alpha Numeric	9 Digit Alpha Numeric	8 Digit Alpha Numeric	12 Digit Alpha Numeric	3,000 items	14 Characters		–	–
4	20	2 cost & selling	6	2 selling & cost	9999		2 cost & selling	2 cost & selling
255 characters	30 characters	30 characters	40 characters	24 characters	–		550 stock items	30 characters
Whatever	Can set up to 9	Numeric	Not Pre-set	Whole Units	Whole numbers inc. fractions		no decimals	whole numbers or 3 decimal points
YES	YES	YES	YES	NO	YES		NO	YES
YES	YES	YES	YES	NO	YES		NO	YES
YES	YES	NO	YES	NO	YES		YES	NO
YES	YES	YES	YES	NO	YES		YES	YES
YES	YES	YES	YES	NO	YES		YES	YES
YES	YES	YES	YES	NO	NO		YES	YES
YES	YES	YES	Year & period to date	NO	YES		YES	YES
500	2,000	5,000 Stock Items. 10,000 Transactions	5,000 Stock Items	9,999 Items Stock Level 10,000	As for Sales Ledger		550 Stock Items	2,500
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	NO	NO	NO		YES		NO	
	30	19	12		No Limit		20	
	EITHER	EITHER	EITHER		EITHER		EITHER	
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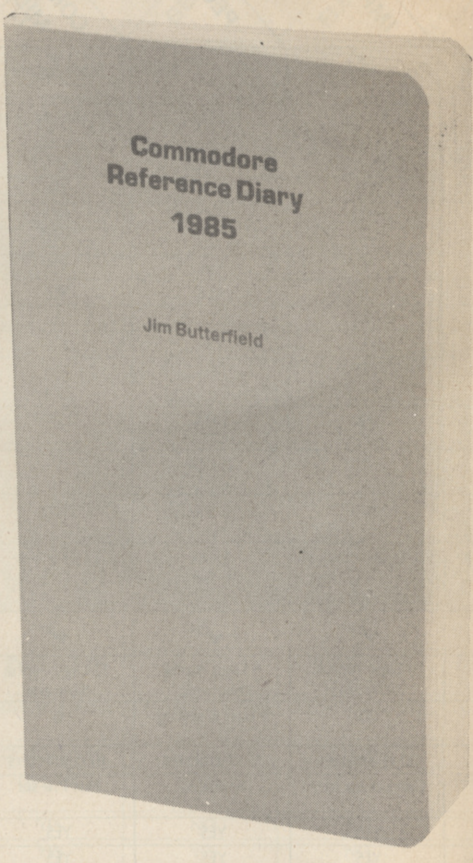

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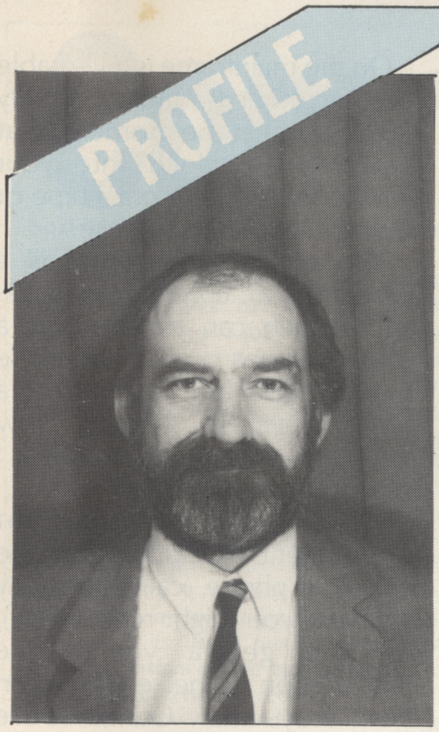

Nick Green

Between Commodore and Compunet

I was originally going to entitle this article 'Nick Green: Man, Myth or Maniac', a phrase I first came across when it was used to describe Brian Wilson of the Beach Boys. Like Brian, Nick is one of those rare, endangered species that any company should hold on to.

Nick Green has been many things in his days at Commodore, from Software Manager in the days when there wasn't any software about, to his current role as chief mediator between Commodore and Compunet, of which more later.

Along the way he was in charge of the education department, a role which seemed to mystify Commodore as much as it mystified anyone else, since he was soon moved from there and put in charge of the Special Projects Group. This gave him scope to do pretty much as he liked, which wasn't always to Commodore's liking.

He had a reputation for seemingly loaning out more computer equipment than has yet been produced by the factory at Corby, and for being blessed with a wonderful disregard for the immense amount of paperwork that we (yes, I used to work there as well) had to fill out in those days. Nick professes a great interest in Cybernetics, Artificial Intelligence, and anything to do with the legendary Seymour Papert and 'Mindstorms'.

I remember on one now famous occasion when Nick attempted to prove Einstein wrong. This wouldn't be too bad in a classroom full of academics using computers, but this was in a pub using beermats to work out the reasoning. After half an hour, Nick triumphantly waved his fourth beermat into the air, convinced that he'd done it, Einstein was wrong and history would have to be re-written! Even when someone pointed out that the equation on which he had based his whole argument

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WASN'T E=MC (squared) but E=MC (squared) + ½M (squared) C (to the power four), Nick remained undaunted and a pint of cider was drunk to celebrate changing history.

I mentioned earlier that Nick now liaises between Commodore and Compunet, and the people who started the whole thing off, namely ADP and Ariadne Software (remember PETNET, from Commodore Computing International April/May 1982?). So, what exactly is Compunet?

Compunet

Compunet is the latest in a long line of computer communications projects, and has finally got off the ground after months and even years when it appeared unlikely that it would.

It is similar in design to the rather more well-known Prestel and Micronet. It is a service that enables you to communicate with other computer users, and with the added advantage of being able to communicate with a massive mainframe computer as well.

It is the mainframe that is the real power behind Compunet.

Nick Green- Supremo of the networks

Using the Commodore modem (and at present this service and modem is available only on the Commodore 64, although it should grow to other machines as they appear), you can send information to and retreive information from that mainframe.

On the mainframe is a veritable host of other programs, mainly educational at the moment, that you can 'download' into your computer and save onto tape or disk for subsequent re-use.

Also on the mainframe is a collection of commercial packages which can be used (at a price) but not copied, since the modem also has built into it a series of security systems. How long before they get cracked, I wonder?

At present the use of Compunet is free (apart from the cost of 'phone calls and any software you might rent or buy), as you get a year's free subscription to the service when you buy the Commodore modem. From then on, it's thirty pounds a year, and judging by the efforts going into developing this system, it looks like Nick Green is going to be very busy for some time to come.

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Communications

No, IBM & BT, it was a good try but you are not going to get away with it....

The British Government has just turned down an attempt by IBM and British Telecom to set up a joint data communication company. The two organisations, the government claims, would have blocked out competition in what is believed now to be the business with greatest potential for the coming decades, electronic communication. The two giant corporations have realised what has become clear to many in the field: that the computer will no longer stand alone with an enthusiast tapping & zapping away. It will link up with many others; it will receive and transmit and it will stretch out its user's reach to an almost unlimited distance. The age of electronic communication has arrived.

Go back a few years and remember huge IBM-style number crunchers standing in lonely eminence – computers then spewed out massive data but could not communicate with anything else except their DP masters. Now nearly all telephone lines have been laid with two separate facilities: one for acoustic (speech) and one for data transmission. Suddenly computers could talk to each other. Only the mainframes and minis, at first, along private networks like Ethernet. They used PSS – packet switching; sending squeezed-up lumps of data flashing along the networks or even better in the gaps in our conversations.

At about the same time Videotex arrived. Videotex is the generic name for Viewdata; systems like BT's Prestel and also Teletext; the BBC's Ceefax and the IBA's Oracle. These simply combine the technologies of the large computer, the telephone (or broadcasting) and the TV set.

Mass Market

Now the telecommunication, data processing, publishing and information businesses have begun to merge and there is, all predictions indicate, a mass market fast coming into being.

We are seeing dramatic changes in the way people obtain information, communicate with each other and conduct transactions – buying, selling and consuming goods and services. With millions of micros in homes and businesses and cheap modems becoming a reality, electronic communication is not just a buzzword for trendy corporate executives but a growing and relevant factor in all our lives. It promises to be as general as the telephone and as influential on the way we manage our lives as that now seemingly indispensible instrument. No wonder BT and IBM wanted to grab a lions' share of the market.

The main thrust on the new communication is through public networking. Public networking, connecting micros to such services as BT's Prestel, Micronet, Telecom Gold – a business message/telex service; and Compunet, Commodore's own recently launched network is growing fast in popularity. The key to this particular breakthrough is the modem (Modulator/-Demodulator) – the small piece of hardware that connects your micro into the telephone network. A modem converts the signals in a computer from digital to analog so that they can flow down a telephone line; and, of course, receiving analog signals, it converts them back again. The modem needs the computers' parallel bytes to be converted into serial ones. For this you need a serial interface, for Commodore an IEEE. Modems are uncomplicated and becoming very inexpensive. Their prices are falling fast and are beginning to come down towards the £50.00 mark.

> **the biggest news since the computer**

Some modems have very interesting features. Commodore is proud that theirs, in addition to letting you connect directly to Prestel, Micronet and Compunet, also includes a built-in security system which eliminates unauthorised use by anyone but the registered owner.

This can be very useful as a major drawback with networking can be the cost. If you restrict yourself to cheap call times it can be economical – each log-on is, of course, a telephone call too – and connect to databases which offer a local call access mode i.e. reaching a distant service through your own local exchange. These accesses are charged at local rate. If you have special interest, you can subscribe to the packet switching services which let you dial and access around the world at cheaper than normal rates.

But what do you want electronic communication for? What can you do with it? There are four main areas of advantage. Information retrieval; messages and mail; interactive and commercial services; and software up and down loading.

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COMMUNICATIONS
(continued)

Information Retrieval

The main frame computers which hold the huge amounts of data offered by services like Prestel and Compunet can vastly outperform micros. They process millions of instructions per second and are ideal for organising enormous amounts of text-based information. You can just tap into these boxes to track information you need quickly and easily. Very convenient for small business use.

Messages and Mail

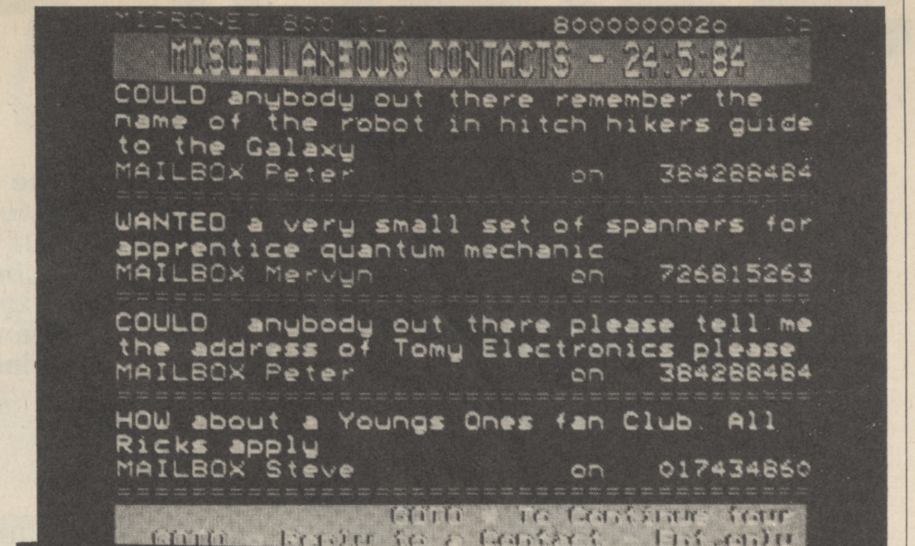
With services like Telecom Gold, you can have a mailbox to send and receive messages. The charm of this is that at any time convenient to you, you can draw off messages and send them to any number of mailboxes simultaneously at no extra cost. It is cheaper and a great deal more convenient than sending telexes.

Interactive Facilities

Home banking in the U.K., with Nottingham Building Society and the Bank of Scotland; shopping and many other commercial operations are now available. Virtually all major travel agents have Prestel booking facilities and so, for example, do the Royal Shakespeare Theatres. You can get free flight and weather information and teleshopping lets you flick through pages as you might a catalogue – only without leaving your TV set or micro. Cable will bring even more facilities.

Software

The networks are nearly all offering software that you download and charge to your telephone account. One computer company lets you access their head office computer and download new versions of their software. You can even sell your own software onto the systems by announcing it and providing it for payment, if you wish.



```
MICRONET 800                  800000002a    0p
  MISCELLANEOUS CONTACTS - 24:5:84
COULD anybody out there remember the
name of the robot in hitch hikers guide
to the Galaxy
MAILBOX Peter                 on   384288484
========================================
WANTED a very small set of spanners for
apprentice quantum mechanic
MAILBOX Mervyn                on   726815263
========================================
COULD  anybody out there please tell me
the address of Tomy Electronics please
MAILBOX Peter                 on   384288484
========================================
HOW about a Youngs Ones fan Club. All
Ricks apply
MAILBOX Steve                 on   017434860
========================================
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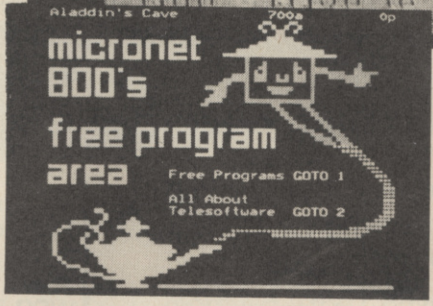
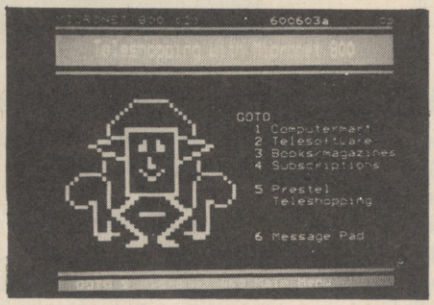


Aladdin's Cave 700a 0p

micronet 800's free program area

Free Programs GOTO 1

All About Telesoftware GOTO 2



```
MICRONET 800              600603a      0p
GOTO
  1 Computermart
  2 Telesoftware
  3 Books/magazines
  4 Subscriptions

  5 Prestel
    Teleshopping

  6 Message Pad
```

Communication developments are only limited by the imagination of the users. One recent idea was to move the electronic games world out of the single lonely fanatic syndrome and games suitable for groups of players connected over the networks are now available. Micronet offers a galactic strategy game which can involve 1000 players simultaneously nationwide with the computer assimilating the moves once a day.

Bulletin Boards

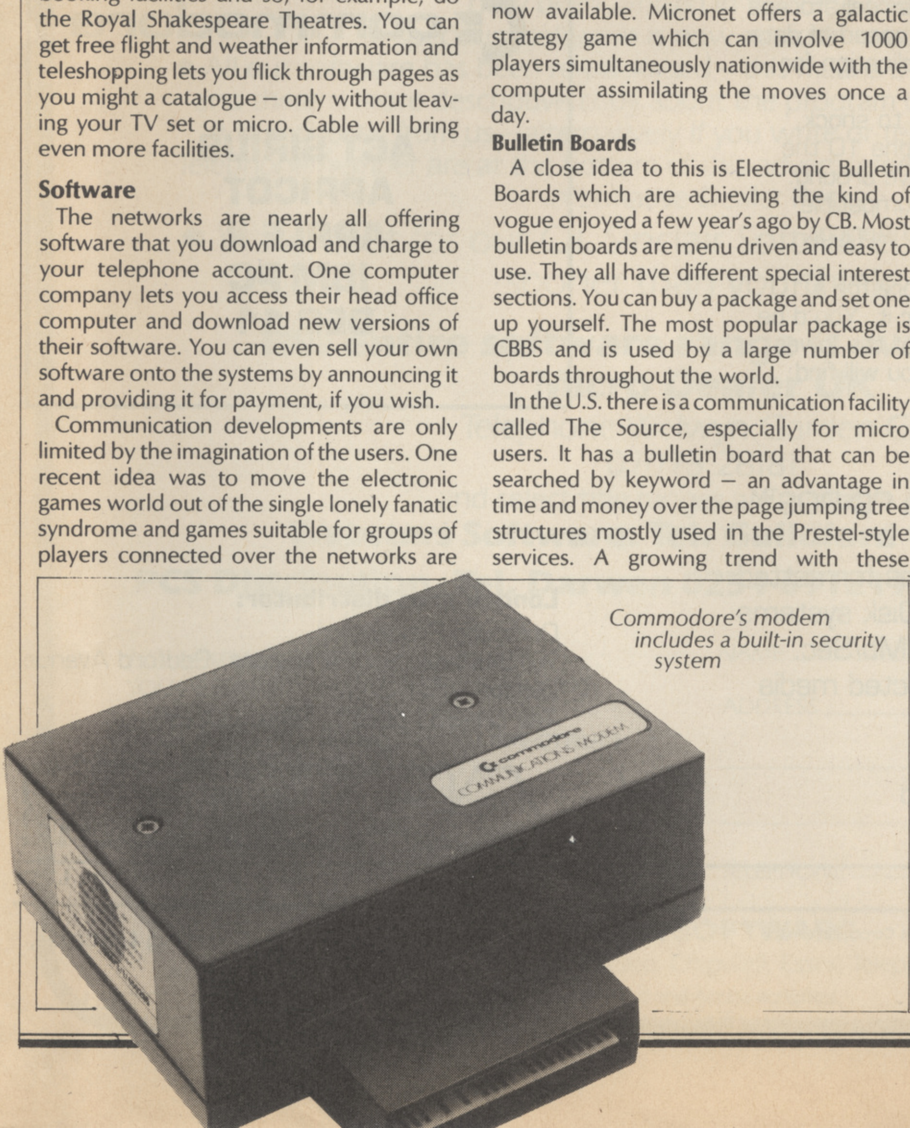
A close idea to this is Electronic Bulletin Boards which are achieving the kind of vogue enjoyed a few year's ago by CB. Most bulletin boards are menu driven and easy to use. They all have different special interest sections. You can buy a package and set one up yourself. The most popular package is CBBS and is used by a large number of boards throughout the world.

In the U.S. there is a communication facility called The Source, especially for micro users. It has a bulletin board that can be searched by keyword – an advantage in time and money over the page jumping tree structures mostly used in the Prestel-style services. A growing trend with these services is SIGs – Special Interest Groups – essentially electronic clubs for particular topics. Some of these are machine specific.

An interesting development in one facility in the U.S., Compuserve, is a magazine section where computer and electronics publications put out computerized versions of their magazines. Now wouldn't you like to know what you can read in CCI next month or better still read some of it in advance? I am not revealing any secrets when I say that CCI is actively pursuing such a development for itself.

Communications Revolution

What we are seeing in the communications fields is the beginning of a revolution – a radical change in the way we regard many functions of our world. Just as the telephone, the car, the radio, the TV, needed comparatively simple technological advances like the refining of oil or the manufacture of valves before they became highly influential factors in our lives, so the modem can bring out the latent forces of telecommunication; linking our micros in a simple-to-use two-way, highly economical connection to a whole range of far reaching opportunities. No wonder IBM and BT tried to swallow up this exciting market, they realise that it is the next stage in our increasingly technology-based lives and that vast sums of money will be made by those who can exploit this new revolution in communications.



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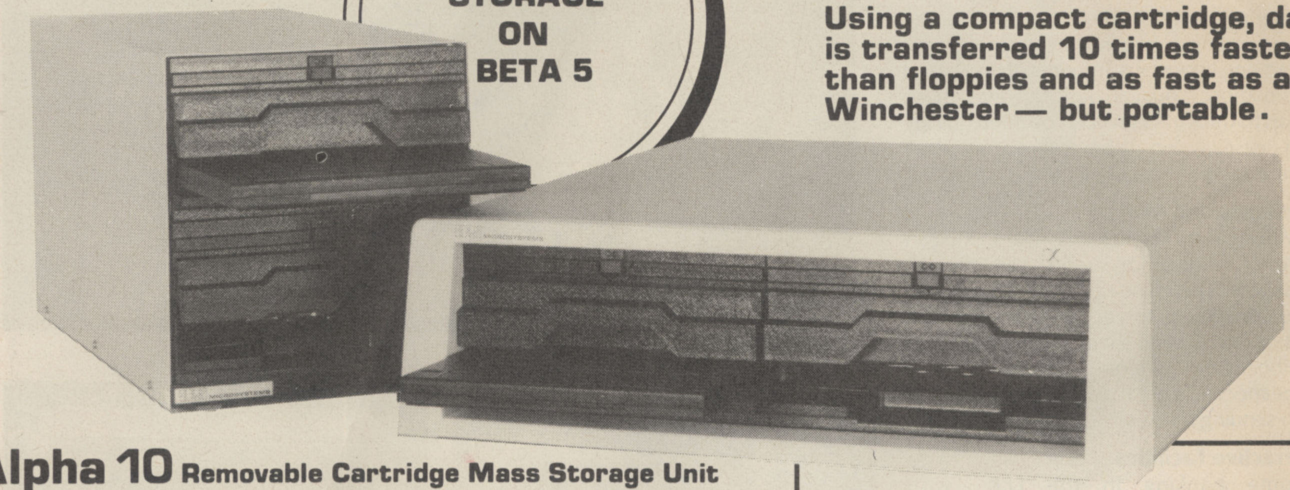

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As well as the IBM PC, the Alpha 10 is compatible with most micros, including Act Sirius and Apricot, Apple II, Commodore, and DEC 11.
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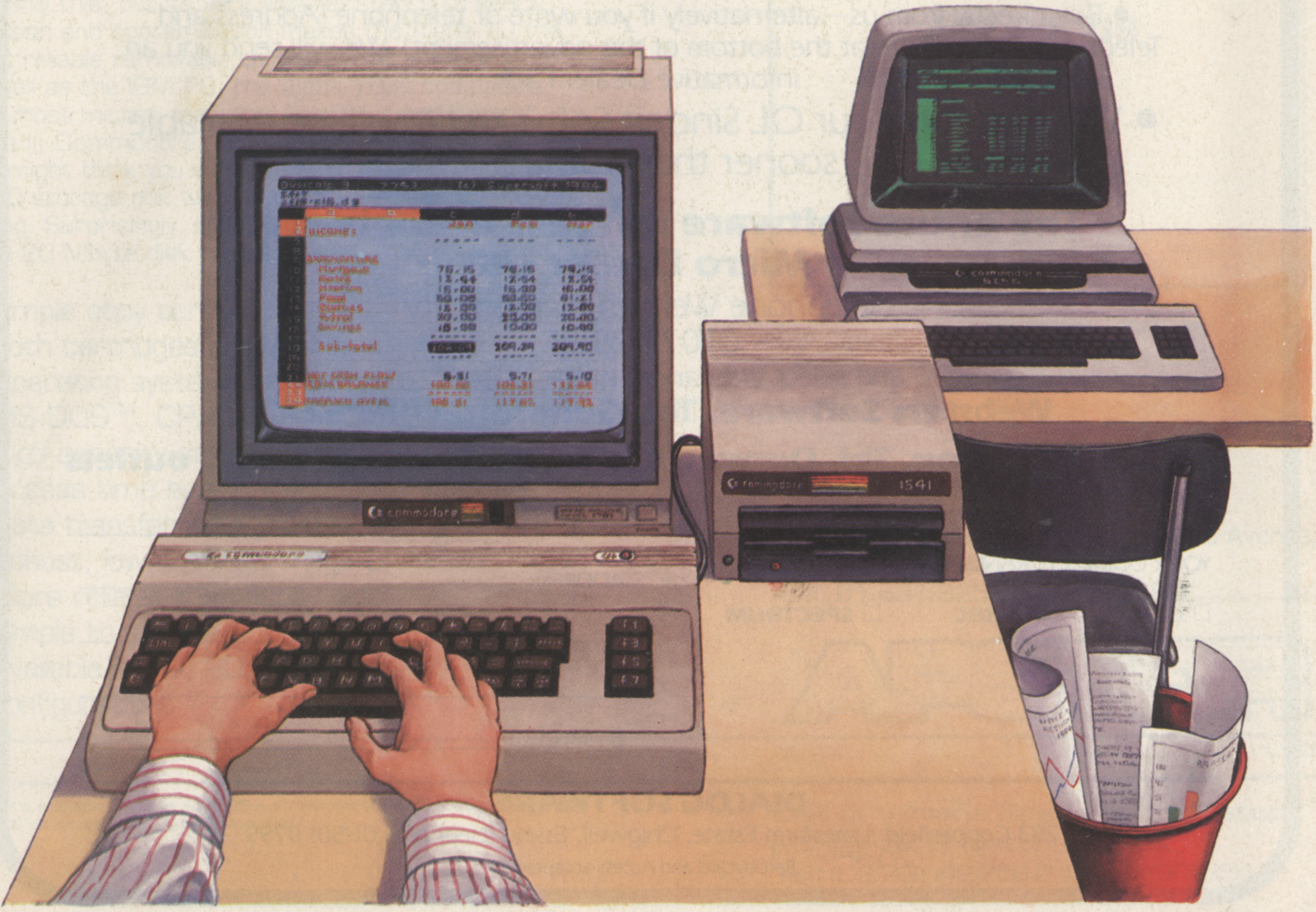

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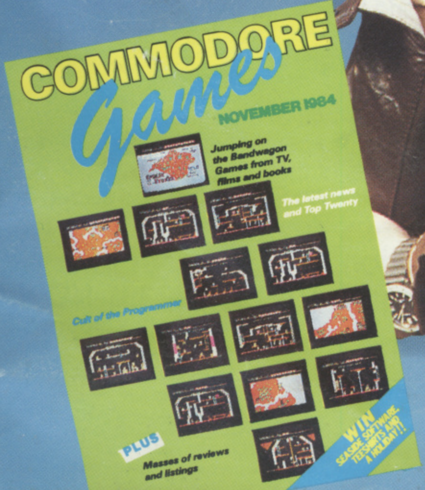
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NEXT MONTH

CCI gets the Christmas spirit with an extra special look at the games market – and George the Robot!!!

Dear CCI. Reader,

We have all come a long way in the few years since this publication was started by Commodore as a club newsletter for its then small number of computer users. Commodore Computing International Magazine now has an estimated 250,000 readers each month. While its major sales are in the U.K., it travels across the world to many countries, from Iceland to Australia. It has a multitude of faithful and vocal readers; for CCI is acknowledged internationally, not only as the foremost publication in its field but also our vocal readers tell us, as the most respected and discussed magazine bought by the serious, Commodore user.

Nevertheless, even if we have pleased our growing readership, we still want to be even more interesting and attractive. So, as you have probably noticed, in very recent issues, we have made a number of positive changes. Among them are more in-depth features, there is more use of colour and creative lay-out; the covers have been redesigned and there is a 32 page games supplement. This month sees two other major changes – an increase in size – to A4 – to give more space for text and illustrations and the inclusion of the first ever issue of a free Commodore Business Magazine. This separate magazine will be a regular addition to CCI, in keeping with the growth strength of Commodore in the business micro world.

Over the coming months you will see other exciting improvements in CCI – don't miss our special year-old issue next month. We are confident you will like what you find in the magazine. If you do, tell any of your fellow Commodore users who are unlucky enough not yet to be CCI readers. If you don't like something in the magazine tell us. We'll listen carefully. Just as much as when it was a club newsletter, it's **your** magazine and it's **your** interests we aim to satisfy.

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C=Cassette Ca=Cartridge D=Disk

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Dixons bid for Currys

The 280 store public limited company Dixons have made a bid for the remainder of Currys ordinary stock it does not already own.

Dixons, which increased total sales in 1984 by 31 percent to £350.8 million, announced the offer in October, and Dixons Chairman Stanley Kalms says Currys are likely to mount "a spirited defence" including a profits forecast and an asset revaluation.

"What really matters is trading profits and the rate at which they can be made to grow," Kalms told shareholders at a recent general meeting. "I am confident that, with Dixons' expertise, such growth within Currys can be enhanced.

Terry Curry, great grandson of Currys' founder, says the company will decide very soon what tact to take and intend to consider not just earnings but also long term forecasts and benefits to the established business.

"I think the offer as it stands just doesn't begin to take into account those things," says Curry, who is joint managing director. "That really is our position".

Currys major business is the retailing of washing machines, refrigerators, freezers and other domestic electrical appliances as well as televisions, hi-fi and audio equipment – similar to the retail line of Dixons. Dixons also are one of the UK's leading retailers of personal computers. In addition Currys deal in after sales repair and servicing, credit financing and shop fitting.

Dixons are offering £4.75 in cash and one new ordinary share of 10p in Dixons for every two ordinary shares of 25p each in Currys. Dixons currently own about 3.2 percent of the issued ordinary share capital.

"The value of our offer is in hard cash and shares, which in turn are backed by hard cash, and the offer exceeds even the gross net asset value of Currys before taxes and closure costs", Kalms says.

100 pages for Labour Party

Security precautions have been said to isolate MP's from their constituents. The Labour Party may find a solution to the problem in Micronet 800.

The Labour party occupies about 100 pages of space on the 30,000 page network and hopes are that it will help improve communications between MP's, party headquarters, constituents and party members.

"Our communications are extremely slow at present," says Roger Ward, a member of the Labour Party Computer Advisory Group. "Most local Party groups, for example, only meet once a month; if you send a circular to branch secretaries, it might not reach the members for weeks."

Already about five Labour MP's are Micronet members and Ward hopes for more widespread use of the system in the House of Commons. He says the most extensive use of Micronet, however, is likely to be on a nationwide scale. "MP's always have problems with rapid communications to their constituents," he says.

Ward has been appointed to establish a pilot scheme and manage the 100 page area on Micronet 800, an electronic magazine database containing information, news, telesoftware and communication facilities.

German sales top British

Recent research shows the West Germans have surpassed the British in sales of packaged business software for microcomputers.

EIU Informatics, and information technology consultant, says the market value of all microcomputer software, including home and business packages, was DM 371 million (£97.6 million) for 1983, a jump of 120 percent, with 71 percent of that value being in the business software sector.

The home computer software sector grew to five times its 1982 value during 1983. EIU say the top selling package in Germany was Multiplant, registering sales worth DM 9 million (£2,37 million) in 1983.

EIU predicts the total market will grow to more than four times its present value by 1988, when it will be worth DM 1,927 million (£507 million), with business software sales comprising DM 1,300 million of that.

Contact: EIU Informatics, Spencer House, 27 St. James Place, London SW1A 1NT. Tel: 01-493 6711.

See for yourself

The Christmas rush is bringing an onslaught of conferences and seminars to tell you everything you would ever want to know about microcomputers. Here is a brief description of some upcoming events:

MicroMarket

The first London MicroMarket features more than 100 companies who show and sell educational, games and small business software, microcomputer hardware and peripherals.

Conference organiser ECC Publications Ltd have required each exhibitor to sell at reduced prices at MicroMarket. First time buyers have access to a "panel of experts" who will offer advice, and all attendees can enter competitions to win more than £1000 worth of computer equipment. Finally, a "Bring and Buy/-Swapshop" arena allows equipment owners to exchange anything of value with other micro enthusiasts.

Entrance to MicroMarket, which is being held in the Wembley Exhibition Centre on Saturday and Sunday, the 10th and 11th November, is £1.50 for adults and 75p for children under 14, including a free catalogue. Hours are 10 am to 6 pm Saturday and 10 am to 4 pm Sunday.

Electronic Jungle

More than 120 Stands are booked at the 8th International On Line Information Meeting and Information Technology and Electronic Publishing Exhibition.

Scheduled for 4-6 December at the Novotel in Hammersmith, the exhibition hosts 80 exhibitors dealing in the area of communications software, information retreival and various databases. Leared Information (Europe) Ltd are the organisers.

The meeting will include more than 70 papers on topics such as the growth of on line use, the emerging medical market and artificial intelligence. Delegates, which numbered more than 2,800 last year, will also hear product reviews of new databases, search and bureau services and other items.

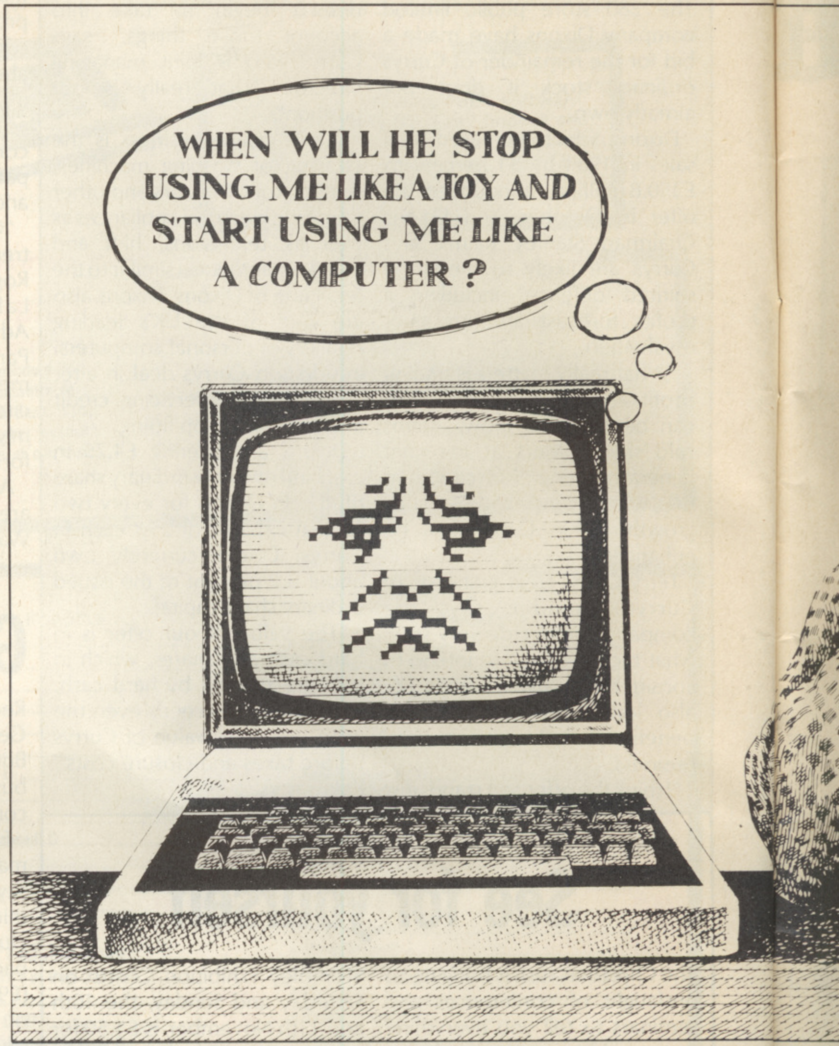
In conjunction with the exhibition and meeting, a two-day seminar on information technology is being hosted by Videotex Industry Association Ltd and LIL.

Scheduled for 3rd and 4th December at Novotel, the seminar is desiged for anyone needing guidance on available technology and what to use in gathering and distributing information electronically. It is aimed at various types of organisations that might need such facilities – banking, finance, publishing, retailing, wholesaling, universities, travel and many others.

Among the subject are channels for transmitting information, e.g. PSS, Transpac, Telenet; cable and satelite transmissions; videotex and the networks; storing information; choosing the appropriate technology and legal complications concerning some of the newer technology. Attendees will be able to visit free of charge the Information Technology and Electronic Publishing exhibition in the same building.

The fee for the two-day event is £175 plus VAT and members of the Videotex Industry Association are admitted for £140 plus VAT.

Contact: Jean Mulligan, Learned Information (Europe) Ltd, Besselsleigh Road, Oxford OX13 6LG. Tel: 0865 730275.


WHEN WILL HE STOP USING ME LIKE A TOY AND START USING ME LIKE A COMPUTER ?

Now you and yo bring out the bes

First, a question.

Who do you think are the world's most avid consumers of microcomputers?

The ingenious Japanese? The fashionable French? The acquisitive Americans?

Believe it or not, it's we British who own more micros per person than any other nation on earth.

Yet, despite its amazing impact, the microcomputer has only just begun to scratch at the surface of our lives. Without doubt, the best is yet to come.

Use and Abuse.

In several recent surveys, some astonishing facts about micro use and abuse were revealed.

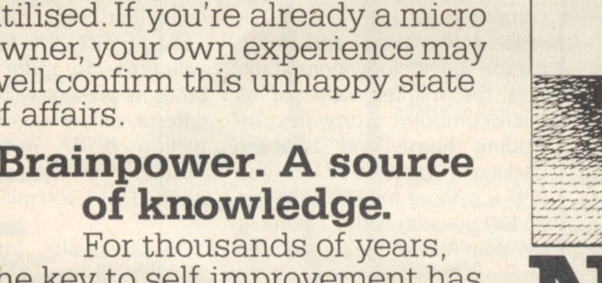
It was discovered that the micro is hopelessly under-utilised. If you're already a micro owner, your own experience may well confirm this unhappy state of affairs.

Brainpower. A source of knowledge.

For thousands of years, the key to self improvement has been in the hands of the written word. Now, thanks to the Brainpower range, it's very much in the hands of the micro.

As the Brainpower range demonstrates, this does not require prior knowledge of micros, or how they work.

The Brainpower concept has been devised as *integrated* applications and educational software. And its aim is to stretch both your mind and your imagination.



Each Brainpower title provides a unique three part package: an applications program; a teaching program and an illustrated manual and interactive tutorial – integrated applications and educational software.

It offers a unique way to realise your own full potential and that of your micro. In a way you could never hope to achieve from the printed word alone.

In this respect, the Brainpower range stands on its own.

A unique concept.

All the Brainpower titles share one thing in common, apart from their stimulating subject matter, that makes them unique.

You will find each title comprises three distinctive elements: A teaching program that helps you to get to grips

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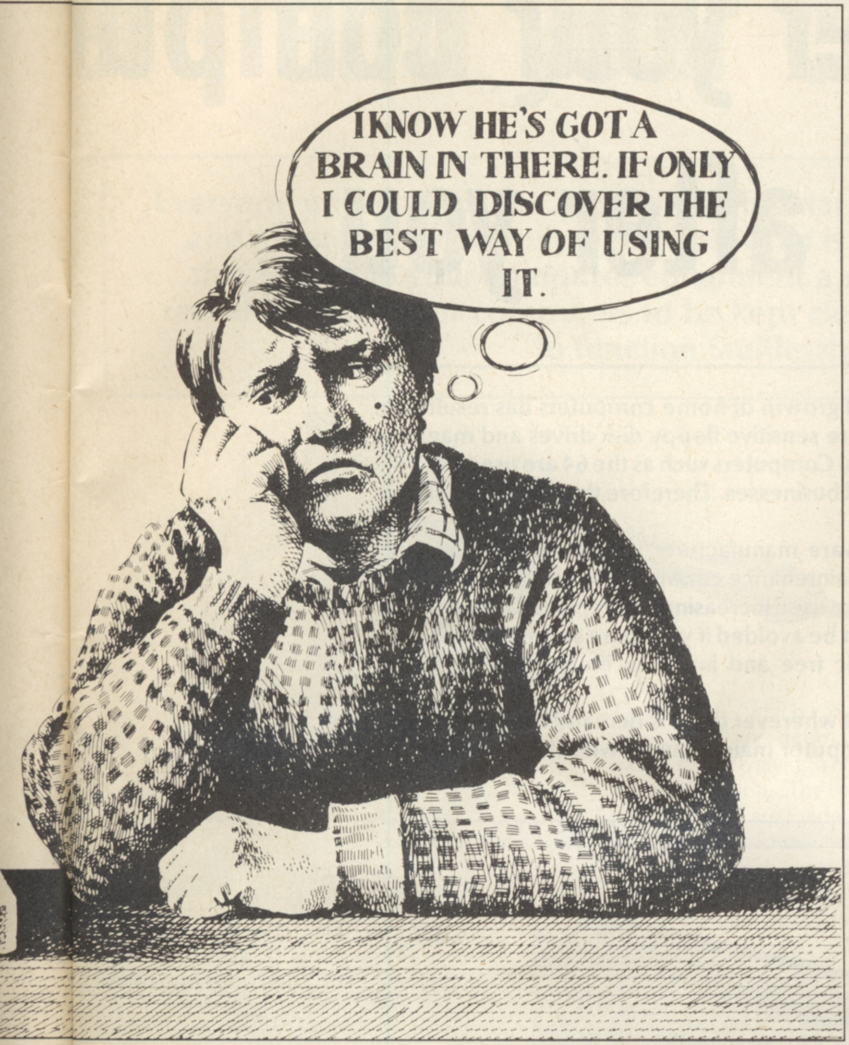
I KNOW HE'S GOT A BRAIN IN THERE. IF ONLY I COULD DISCOVER THE BEST WAY OF USING IT.

l your micro can best in each other.

with the subject at your own pace. An applications program to put what you learn into action. And finally, with each package, you get an expertly written book and interactive tutorial.

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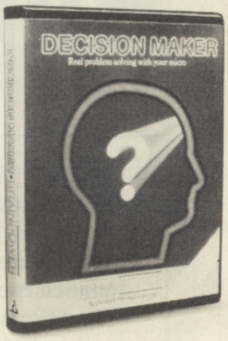
STAR WATCHER

The secrets of the heavens are yours. Isolate all the constellations as well as main stars for easy identification. Even turn stars and constellations on and off at will. Screen by screen, you will see exactly how the 1,500 brightest stars move through time and space. And all from any point on the Earth's surface at any time of the year.

Star Watcher is without doubt the definitive home observatory.

DECISION MAKER



Should you buy a new house? Change jobs? Have children? Start your own business? Such decisions should not be taken lightly. Armed with Decision Maker, you can be quite sure of examining every avenue, and arriving at a rational, structured answer.

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Tackle all the number problems you're likely to face in daily and business life. From straightforward multiplication and division of fractions, through decimals, percentages, ratios, mark-ups and margins to compound interest, depreciation, VAT and PAYE.

Numbers at Work gives you a distinct edge, since you will be able to both understand and manipulate numbers at will.

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Project Planner teaches you how to divide even the most complex project down into meaningful components. Learn how to determine the length and importance of every single task, and those elements critical to the fulfilment of your plan. Even anticipate problems you hadn't envisaged.

You have the measure of any situation because you have the fullest possible grasp of all the factors which affect it.

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Forecaster takes the guesswork out of forecasting, by accepting that tomorrow's events will be best predicted on the basis of today's facts. Armed with Forecaster, sales targets and growth trends, even sporting events and election results can be accurately and very quickly predicted.

Invaluable to you in both your private and business life.

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Entrepreneur teaches you all the steps required to plan and start your own business. It will forecast your first 18 months' cash flows, generate your Profit and Loss Account and Balance Sheet. Help you in discussions with your bank manager and partners. Explain the notions of assets, liabilities, overheads, working capital, cash flow and break even point.

Invaluable to anyone who is planning a business venture.

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BRAINPOWER

Look after your compute will look after you

During the last few years the rapid growth of home computers has resulted in the development of smaller, more sensitive floppy disk drives and magnetic media with higher storage capabilities. Computers such as the 64 are used not only in the home, but increasingly by small businesses. Therefore the question of maintenance is of great importance.

Traditionally it has been the hardware manufacturer who provides after-sales service, but with home computers maintenance contracts are often optional and third party maintenance companies are used increasingly to replace faulty parts on site. However, many malfunctions can be avoided if you spare some time to keeping your equipment clean and static free and invest in inexpensive products designed for this purpose.

The laws of economics indicate that wherever there is demand it will be met by supply. The same law applies to computer maintenance, with the availability of various computer care products.

A contaminated environment

Unfortunately we now live in a polluted world and homes and offices are not free from this pollution. Just think of all the contaminants in a normal office environment – dust, ash and tar deposits from cigarettes.

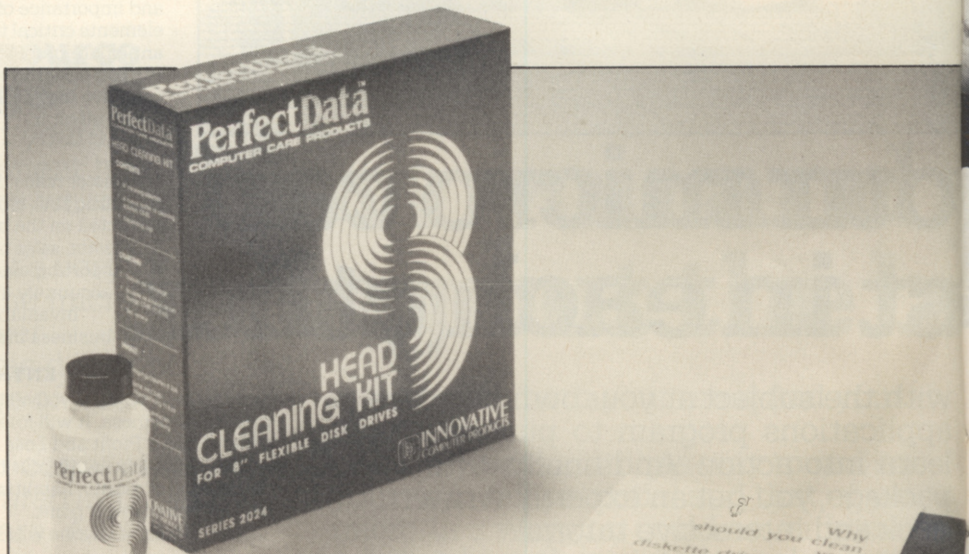
A major area of static build-up is on the VDU screen. Take a look at your TV or monitor. Is the display hard to read because of dust, grease and finger marks?

If it is, you may be submitting yourself to undue eye strain and input errors.

This build-up can be quickly and easily removed with a range of products such as cleaning fluid and cleaning cloths, cleaning tissues and anti-static cloths.

Those long hours spent at your keyboard also inevitably lead to a dust and grease problem. Run your fingers across your keyboard and pat yourself on the back if you didn't say 'Urgh!'. Products available to combat this sticky situation include aerosol spary foams or air dusters, with cleaning cloths and cotton buds to reach every nook and cranny.

The same products can be used to clean your printer. An aerosol of pure compressed air, being ideal for removing dust and paper chaff from the inaccessible areas of a printer. Cleaning wipes remove ink from the platens of printers to prevent marks on envelopes or letters.


PerfectData
COMPUTER CARE PRODUCTS
HEAD CLEANING KIT
FOR 8" FLEXIBLE DISK DRIVES
INNOVATIVE COMPUTER PRODUCTS
SERIES 2024
Cleaning Solution
Why should you clean your diskette drive heads?

ter - and your computer

Everyone understands the necessity of regular maintenance for cars, hi-fi and other electrical equipment, but when is the last time – if ever – that you gave your computer equipment a spring clean? Sue Pearce reveals the need for computers to be kept clean and static free in order to function faultlessly.

FALCON
Dust-Off II
Dust-Off II
The Advanced Cleaning System
FALCON
Dust-Off II
(340g)
NET WT. 12 OZ
CAUTION: CONTENTS UNDER PRESSURE READ BACK PANEL

Prevention is better than cure

There is nothing as frustrating and time wasting as losing data. Research has shown that no less than 85% of read/write malfunctions are caused by contaminated heads in the disk drive. Flexible disk drives rely upon clean read/write heads for the transfer of data to and from the oxide-coated media or diskette. The close contact between head and disk produces a deposit of oxide on the head. This is in addition to other contaminants mentioned earlier, namely dust ash and tar deposits from cigarettes. Therefore if you want to reduce data loss, errors and poor performance, look after your heads.

Floppiclene which are moistened with Safeclene, an internationally approved safety solvent, giving a non-abrasive wet/dry cleaning action. The cleaning disks in a special jacket are loaded into the disk drive in exactly the same way as a standard floppy disk. A new disk is used for every cleaning operation and thrown away after use, removing any possibility of recontamination.

Believe it or not, the immediate surroundings of your computer can also cause problems. Dust and static collect on the furniture around the computer. Synthetic carpets and floor coverings can also create considerable static problems.

Computer care products are not expensive. Don't think you can save money by using domestic cleaning products designed for kitchens, bathrooms, and highly polished furniture surfaces – they are not suitable for computers. You are likely to do more harm than good as they usually contain ingredients such as abrasives, ammonia, heavy waxes and silicone, which attack the basic material of computers and leave residues. Silicones 'migrate' and will form silica carbide on the mating surfaces of electrical contacts, causing malfunction.

The following is a selection of computer care products currently available.

Computer care kits

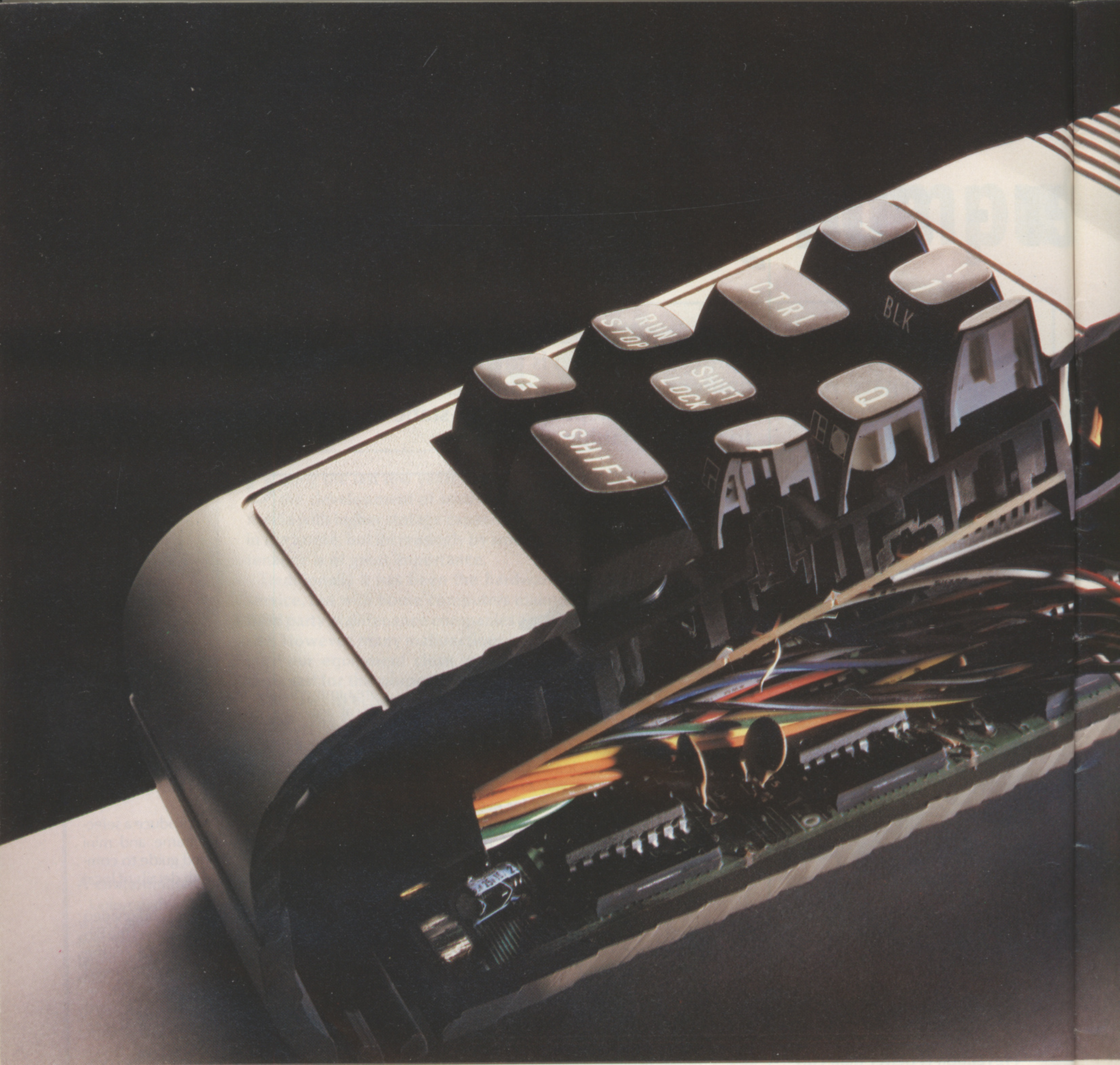
Automation Facilities' Floppiclene disk head cleaner is available for 8 inch, 5.25 and 3.5 inch disk drives and is included in the company's Microkit. Also included are Safeclene's anti-static screen wipes with lint-free Microwipes or Safewipes to polish screens dry; Safeclene fluid and Safebuds; Sprayduster, an aerosol of compressed air; Foamclene; Astopol anti-static polish for the area immediately around a computer; and Ascat anti-static carpet treatment supplied in a specially designed pressure sprayer with pump, flexible hose and adjustable spray-gun which allows large areas to be treated and time-consuming faults caused by static to be prevented.

Automation Facilities also produce a selection of products for mainframe and mini computers and an illustrated guide to computer cleaning, together with details of local suppliers.

Bib, well-known for their audio/video maintenance kits, has now produced the Bib Computer Care Kit. Retailing for £8.74, the kit comprises an audio cassette head cleaner, with cleaning fluid, air duster for cleaning dust and dirt away from keyboard and printer, together with anti-static screen cleaning fluid, with cleaning cloth.

Developed specifically for the home computer enthusiast and the semi-professional user, a range of computer care products from Memorex consists of: VDU and TV screen cleaning kit, comprising 20 foil sealed sachets of cleaning tissues and two anti-static cloths, for £4.95; a case and keyboard cleaning kit also priced at £4.95 and comprising aerosol spray foam, cleaning cloth and cotton buds; and a disk drive and head cleaning kit with 10 disposable head cleaners and aerosol spray cleaner for wet and dry action, costing £9.95. Each kit comes complete with a set of instructions.

Associated Computer Supplies also has a range of computer care products to suit the small and domestic user. The range includes disk drive and maintenance kits; cleaner and fluid kits for cassettes and disk drives; keyboard cleaning fluid with cleaning wards; blower brushes; and TV/VDU cleaning fluid with cleaning cloths.



Are you only using 1/

To only play games on a Commodore computer is like asking Albert Einstein to work out the square root of four.

The computer's brain barely ticks over.

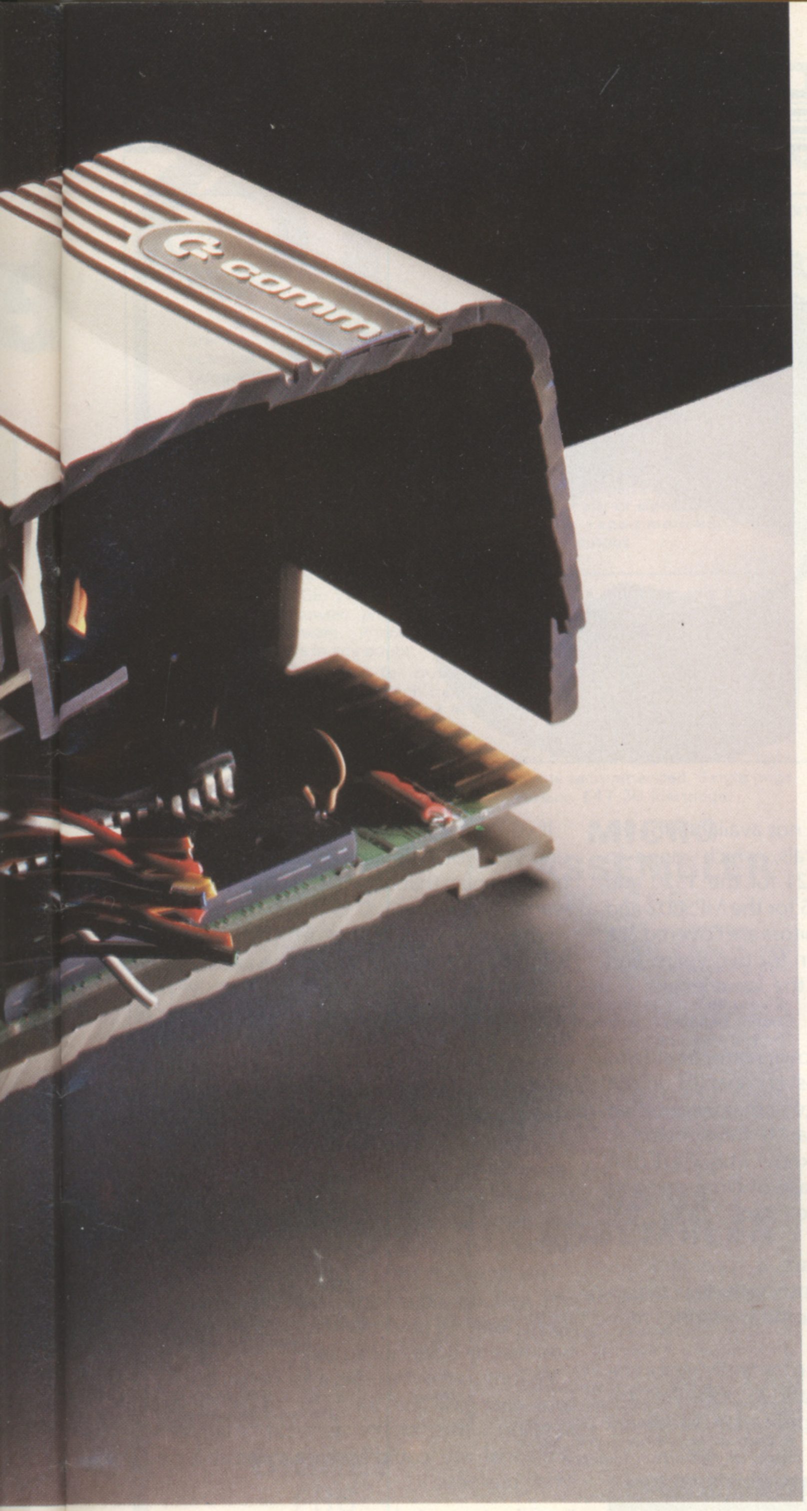
To really stretch it, you need more interesting software programs. For example, record keeping, interactive education, stimulating adventure games or word processing.

And for those you need peripherals.

Like a Commodore disk drive, a really fast storage and retrieval system with a vast memory.

Or a Commodore cassette unit, the inexpensive way of loading and storing programs.

For those who like the idea of text and graphics being more alive and having greater clarity than on a TV, there's the Commodore colour monitor.



COMMODORE MPS801 ☐
Dot matrix printer. £230.00.
Tractor feed. Print speed:
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And for hard copy, there are our four printers and a printer plotter. These will preserve on paper–in colour, black and white, chart form, graphs or text, the fruits of all your labour.

Finally, for more exciting games, there are joysticks and paddles.

So use your brain. And make sure you use all of your computer's brain.

FOR FURTHER INFORMATION, TICK ONE (OR MORE) OF THE BOXES ABOVE AND SEND TO THE COMMODORE INFORMATION CENTRE, 1 HUNTERS ROAD, WELDON, CORBY, NORTHAMPTON NN17 1QX. TEL: CORBY (0536) 205252.

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commodore

COMPUTER CARE CONTACTS

Automation Facilities: Blakes Road, Wargrave, Berkshire. Tel: 073-522-3012.
Bib: Kelsey House, Wood Lane End, Hemel Hempstead, Herts. Tel: 0442-61291.
Memorex: Memorex House, 96-104 Church Street, Staines, Middx. Tel: 0784-51488.
Associated Computer Supplies: Bowmaker House, Etruria Road, Hanley, Stoke-on-Trent, Staffs. Tel: 0782-287121.
International Data Automation: 13 Station Parade, Virginia Water, Surrey. Tel: 09904-4944.
Inmac: Davy Road, Astmoor, Runcorn, Cheshire. Tel: 09285-67551.
ISA: 80/84 Thornton Road, Bradford, W. Yorkshire. Tel: 0274-306787.
Stralfors Data Products: Unit 11, Techno Trading Estate, Bramble Road, Swindon. Tel: 0793-37837.

inmac
Daisywheel
Cleaner
Solution

What if things still go wrong?

No matter how well you take care of your computer, things do occasionally go wrong and when they do the repair bills can be agonizing.

Although experts estimate computers break down less than once a year, the cost of one repair can range from £25 to £35, depending on what type of machine you own. That cost includes parts and labour, regardless of the fault, unless the repair costs exceed those minimum charges. Commodore's Kim Shafi says that it is unlikely, barring something drastic (if every tube on the circuit board blows, for example).

Most computers come with warranties at purchase time but generally cover only one year. Commodore is now offering from two to five years of coverage to future buyers through Domestic & General Insurance Co Ltd. Prices, which include the automatic first year of coverage, range from £12 for two years on the VIC 20 to £49 for the same period on the SX64. For five years, the VIC 20 coverage costs £25 and the Plus/4 is £45.

Five years insurance is not available for the SX64 or the peripherals, which range in coverage cost from £21 for the 1520 and MPS801 printers to £35 for the MPS802 and DPS1101 printers. Monitors are covered at a cost of £12, once again for two years, and disk drives are £25 for the same length.

Read the fine print

When shopping for cover plans, be sure to read the fine print. Most companies do not insure cosmetic damage or major items that would be better replaced than repaired. Also make certain you know who will do the actual repairs. In the case of Domestic and General, Commodore itself does the repairs.

Postage costs also are a consideration. Commodore's repair costs include postage, packing and VAT, but some warranties may not.

Also note the deadline for applying for the insurance. Under the above plan, you are required to file the application within 30 days of purchase.

If you don't like the idea of paying for the one year you'll be getting anyway, you can opt for a plan that begins after your standard warranty runs out.

One such plan comes from the newly-formed Micro Repair Club. The club offers options ranging from one to four years coverage after the expiry of the manufacturer's warranty.

Since the club covers most major home computers, they have contracted with Computeraid Services, part of Thorn EMI Information Technology Division, to do the repair work. Members send faulty computers directly to Computeraid Services, who say users should have their console back within 14 days.

The newly-formed club, however, does not include peripherals but may include them later. Computers used strictly for business also are not covered.

"As long as they're using it for personal use, too, that will be all right," says Simon Jamison, the club's general manager. "Personal use could include using it for a small business."

Repairs free of charge

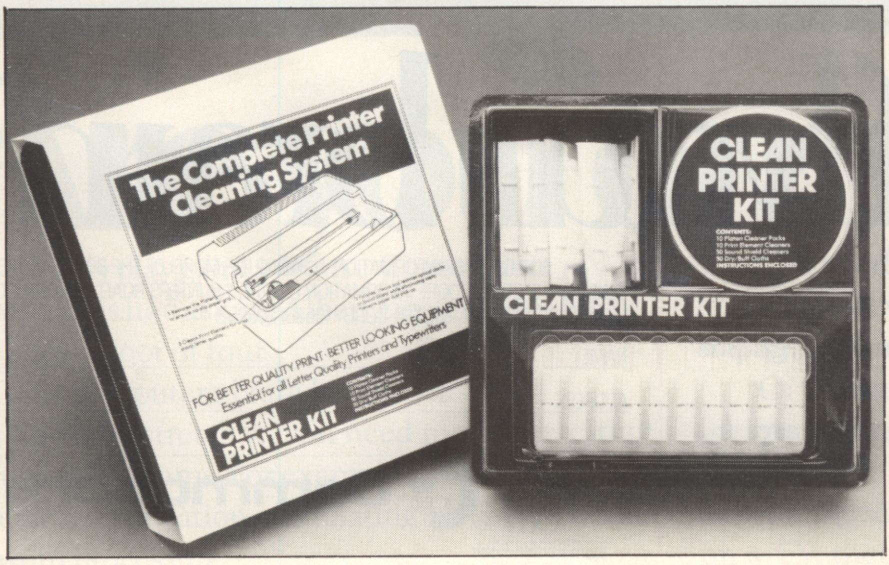
The one year package for the console is £24.95 for the first year and renewal is £14.95. If you sign for all four years initially, the total cost is £57.95. Upon membership, all repairs covered are done free of charge.

Jamison says plans for the future include newsletters, special offers and extending coverage to theft and accidental damage. "We do not believe there is anything like it on the market," he says.

You should be able to obtain membership from major computer retailers in the near future.

Domestic & General are underwriting this insurance scheme as well. Furthermore, schools will get a special deal on club membership.

Contact: Micro Repair Club, Swan Court, Mansel Road, Wimbledon, London SW19 4AA. Tel: 01-946 7777.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The six-four supplies Co is the premier independant mail order supplier of products for the Commodore 64. Shop by mail order in confidence — and experience the kind of service enjoyed by thousands of regular customers in the U.K., Europe and as far afield as Fiji. We can provide anything from our catalogue of over 1000 items of recreational, educational and business software. (Catalogues 50p and large S.A.E. but free to customers.)

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Please add 50p P&P for orders under £20 (Europe £1 each item of software, Airmail elsewhere at cost). Make cheques/POs payable to THE SIX-FOUR SUPPLIES COMPANY.

DISCO
£9.95

(Softcell) — cassette

This is the most powerful tape to disk transfer utility you can buy. No program rewriting required, unlike with others. Menu driven.

TAPER
£9.95

(Softcell) — cassette

Make security backups of your own BASIC/machine code programs. Very, very powerful

FASTBACK
£9.95

(Softcell) — cassette

Can make backups with a difference — they will load up to seven times faster than the original! One very well-known adventure now takes only 2¼ minutes instead of 15½! ALL THREE — TAPER, DISCO, FASTBACK — AT SPECIAL OFFER PRICE OF £25.75. Dealer enquiries welcome.

DISKEY
£36

(Adventure Int) — disk

Diskey gives your Commodore 64 the file-handling capabilities a serious user needs. Many users have complained about the inability of the C64 DOS to copy SEQ or PRG files, or USR files of similar form, from disk to disk. Diskey gives you not only this, but also the ability to examine, copy, or modify any disk. You can now rescue data from a crashed disk, and recover killed files.

Similar is SUPERDISK UTILITY (£12.50), a bit more restricted but very good value. (For single drive use only.) Single/double-disk use.

PAPERCLIP
£75

(Batteries Inc) — disk

LOOK AT OUR LOW, LOW PRICE. If you've been saving up for this excellent wordprocessing program, you're a little nearer than you thought. It is still the best in a very strong field. With 80-column display mode.

MULTIPLAN
£95

(Microsoft/Hesware) — disk

Easy to use but very powerful spreadsheet. You can define cells by word labels rather than coordinates. Sorts columns or rows numerically or alphabetically. Very highly recommended. Serial printer output.

CALCRESULT
£95

(Handic) — disk

Has true 3D (multipaging) facility, and histogram features. Versions for Commodore and Epson printers. This is a very powerful and much liked spreadsheet. Very highly recommended. Single page version £47.50 (cartridge).

MICRO ASSEMBLER
£55

(Supersoft) — cartridge

Best of the lot. If you're into machine code — or working that way — this is the one to get or save your pennies for. Features 3-pass assembler, unlimited labels, source files can be linked, monitor, full screen editor, disk or tape operation. Plus AUTO, DELETE, FORMAT, FIND, NUMBER, DISASSEMBLE, OUT and TABLE. Monitor has standard TIM commands plus hunt, transfer and disassemble

HS-64 ASSEMBLER
£55

(JCL Software) — cartridge

Combines the features of a powerful assembler with a number of toolkit programming features. An ideal program development aid. Includes AUTO line numbering, FIND string, CHANGE string, DELETE line range, TYPE to inspect or print a file without loading it into memory, GET source text files, PUT outputs source files to disk, DO executes first line, LIST source file, RENUMber lines, JOIN program files, SCROLL multiple viewing facility, CBM code selection, ASCII code selection, RBAS reset, SIZE of file and start/end load address, SETBRK and CLRBRK to insert and remove break points from program being tested in RAM, HD and DH to give number system conversions, BOOM for a complete cold start.

KOALAPAD
£80

(Koala Tech Corp) — Inc cartridge

Comes complete with KoalaPaint cartridge which permits all those fantastic graphics facilities — commands include zoom, copy, colour swap, draw, lines, rays. Save pictures on disk and call these up from BASIC to use in your own programs! Programmer's Guide (disk £13) is useful. Logo Design Master (disk £30), Spelling I (disk £30), Colouring Series I — Geometric Designs (£25) are some of the other support programs available but it's easy to write your own.

MICRO-SIMPLEX
£173

(Micro Simplex) — disk

If you're in business and need to maintain an accurate audit trail and VAT record, this is the program for you! Will save you literally hours of work. Fully recognised by the authorities. Suitable for schemes A to F. This is a specialist, very highly developed product from a software house who offer an excellent after-sales service to registered users. Demo available on deposit.

Amongst the more obscure items we can supply are:

- A *parallel* bus interface for the 1541 floppy drive! This speeds up data transfer by over 5 times! Includes cable, interface and relocatable software — price £75.00.
- IEEE interfaces — JCL (£68) or DAMS (£62) — to connect your 64 to CBM printers and drives. Fancy a megabyte or two of disk storage — that's how we use some of 64s.
- Printer interfaces which range from user port parallel cables (£29 including software) — to a cartridge — port conversion interface (grappler C.D. £100) which enables most dot matrix printers to print the special Commodore ROM graphics symbols, thus allowing non-CBM printers to be used with software written with only CBM printers in mind. Let us help you choose properly.

SUPERBASE 64
£88.00

(Precision) — disk

Really excellent database generator, still at our special price. All things considered, we think this one's the best of its type and a must for all serious Commodore 64 users. Can be used for anything from mailing lists to stock control and invoicing. Lets you tailor the database to your exact requirements. Differs from program generators such as TLO and CodeWriter in that the systems menus and core program are always the same. But Superbase is not less the powerful for that — in fact it has database features and facilities beyond the needs of mere mortal folk! Now with STEPPING STONES program modules at £10 each including Job Costing/Estimating, Sales & Purchase Daybooks, Cashbook, Stock Records.

FLIGHT SIMULATOR II
£40 /£33

(Sublogic) — disk/tape

This is so good the authors think you can learn 'the ropes' as far as instrument control and flying are concerned. Accepting the limitations on the graphics side — nevertheless outstanding in terms of personal computers — the simulation is quite excellent. Expensive but it's the best one for the 64 by far...

SPECIAL OFFERS

PILOT
(d) £38

ASSEMBLER 64
(d) £45

LOGO
(d) £57

EASY CALC
(r) £40

MAGIC DESK
(r) £40

SIMONS BASIC
(r) £45

EASYSPELL (U.S.)

EASYMAIL
(d) £20

S.A.M.
£48

(Tronix) — disk

This is SOFTWARE AUTOMATIC MOUTH, a quite outstanding piece of software which gives your 64 limitless speech synthesis capability. Offers English text-to-speech or phonetic input, in direct or program modes. Full control over pitch, speed, inflexion. There really isn't anything like it, even on hardware!

THE LAST ONE
£57.50

(DJ 'A1' Systems) — disk

Special Offer Price!

Programming aid that frees you from the graft if you're thinking of writing specific applications. Creates stand-alone error-free coding in standard BASIC. Input is in the form of one-line descriptions defining, in plain English, the user's intention. This word 'flowchart' act as basis of computer's questioning session which leads. Programs you create can be for any application. Highly recommended.

BOOKS

There are some 60 or so books specifically about the Commodore 64. We have a full list (50p) with a description of each. Included in the list are many other books of interest to Commodore 64 users. We can supply any book at cover price plus 50p each towards P&P.

ANATOMY OF THE 1541
£14.95

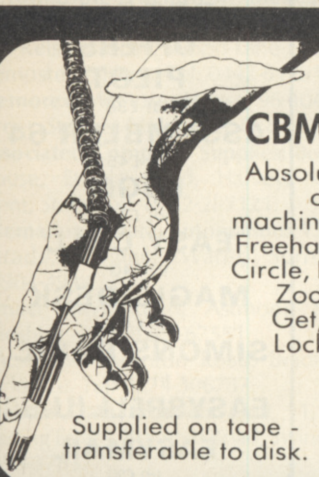
Really excellent book for those keen to get inside their 1541 disk unit. Absolutely everything you need to know — includes ROM listings, descriptions of 1541 use, use of programs such as COPYALL.

COMMODORE 64 HOME COMPANION
£10.75

If you want more details of some of the better quality 'serious' USA software for the C64, this book is an invaluable source of reference.

PRICES CORRECT AT TIME OF GOING TO PRESS. Let us quote you if you manage to find lower!!

STACK XMAS OFFER



Light Pen CBM 64 or Vic 20*

Absolutely the best....see opposite-100% fast machine code Featuring:- Freehand draw, Nib size, Circle, Box, Fill, Line, Text, Zoom, Animation, Put, Get, Save, Load, Print, Lock X, Lock Y and 10 Games.

*needs 16k

Supplied on tape - transferable to disk.

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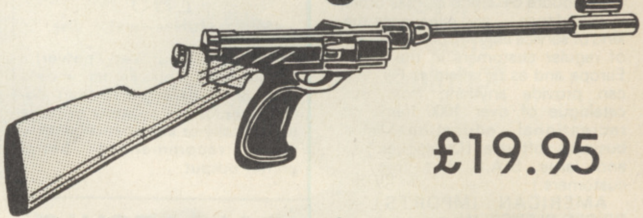

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A unique game system for Vic 20 or CBM 64. Load one of the three games included and shoot the cowboys, rats, convicts etc on your T.V. from up to 10ft away. Complete full colour and sound effects.

STACK 100
CBM 64 Compiler

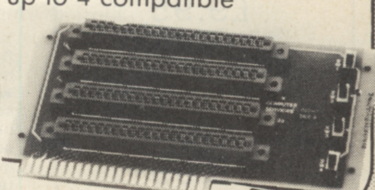
CBM 64 Compiler

Turns your normal basic programs into very fast machine language like code.

Disk Based £9.95

4 SLOT Motherboard CBM 64

A high quality switchcable expansion unit with gold slots enabling up to 4 compatible cartridges or RAM packs to be simultaneously inserted and turned on or off at will.



£28.00

CENTRONICS INTERFACE VIC 20/CBM 64

A very high quality strenghtened cable (not flimsy ribbon) together with easy to use driver software on cassette (disk £5 extra) compatiable with Easyscript, Vizawrite, Simplywrite, Wordcraft and many others (but not all).

£24.00

RS 232 C INTERFACE CBM 64/VIC 20

A full Bi-directional interface for Printer, Plotter or modern connection. Provides standard D-type male connector compatible with any software which uses the serial port. Special cable service available if required. Full documentation.

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STACK 100
IEEE 488

IEEE-488 VIC 20/ CBM 64

This cartridge provides the standard CBM connector and enables all 3000, 4000 and 8000 series' disk drives and printers to work with the Vic 20 or CBM 64. Supports normal CBM 64 commands

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ARROW C64

A Cartridge Giving:-

- 7 times normal cassette speed for loading and saving
- Machine Language Monitor
- High Speed Tape positioning
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ARROW PLUS C64

ARROW PLUS C64

All of the features of Arrow with the addition of Assembler and Disassembler facilities

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HELP C64

This Cartridge is absolutley packed with terriffic routines and facilities:- 20 Additional Basic Commands, Printing Disassembler, Monitor, Disk Operating System Support,

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SUPER HELP C64

This Cartridge features all of the commands of Help with the addition of a Full Symbolic 2 Pass Asssembler

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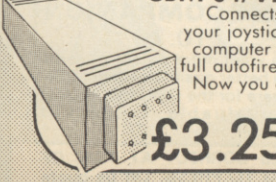

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Almost unbeatable, rubber feet, 2 fire buttons, great action quickshot look alike

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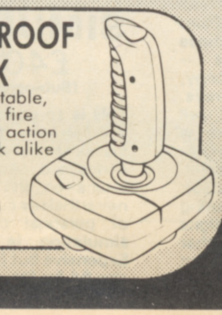

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COMPUTER PRODUCTS

Dear Editor...

Dear Editor

I have for you a cautionary tale about what can happen to people who send money to seemingly reputable American Software Companies. I would be grateful if you would print this letter as a public service to your readers.

Having purchased a copy of ZORK II, by INFOCOM, I decided to order the printed map, poster and 'InvisiClues' which were advertised in the packaging as being available from the ZORK Users Group, based at INFOCOM's headquarters in Massachusetts.

Unfortunately, because of problems with sending international money orders for relatively small sums of money through the post, I decided to send cash. Having bought my American dollars at the bank, I posted them, with the order form, on 15th April 1984, and sat back to await delivery.

By the 5th June, nothing had happened and so I wrote to the Zork Users Group again, and asked them to find out why there had been a two month delay in filling my order.

By the 15th of July I had lost patience. I wrote again, by Registered Post, demanding either the goods I had ordered or my money back, by return of post. At the same time I also wrote to INFOCOM direct (at the same address) and asked them to sort the matter out for me.

Both these letters were received in INFOCOM's Massachusetts office on 23rd July by someone whose signature is distinctive, but unreadable – although their middle initial seems to be 'E' and their surname looks like it starts with 'A'.

On the 4th August, I got an undated reply. It was a standard letter addressed to "interested customers" explaining that the Zork Users Group "closed on July 31, 1983", and that INFOCOM had taken over their mail order items. No mention was made of my letters, my money, my goods, my name or why mail addressed to the Zork Users Group was not being answered even though it was addressed to the same office as INFOCOM's headquarters. To add insult to injury, also enclosed was an order form for, amongst other things, the goods I had ordered – by now repackaged at a lower price.

I wrote again to INFOCOM by return of post, again by Registered Post, addressing my letter to Jennifer L Fine (INFOCOM's contact for Product Support). My letter was received in Massachusetts on the 17th August and was signed for by a D Krasntz (?). I pointed out that neither my complaint nor my order for goods had as yet been answered, let alone dealt with. I complained that I had now spent $23.85 which had been set as cash to INFOCOM's address in April, plus $8.50 in postage – a total of $32.35 for products now priced at $7.95 including shipping. I asked them for my goods, plus a $15.10 cash refund, and I asked them what they proposed to do about the trouble and additional postal expenses I had been put to.

It is now very close to the end of September. I have had no reply from INFOCOM. I have had no goods, nor the promise of goods. No apology. Not even another copy of their standard reply to "Interested Customers".

Were Infocom based in the UK I would, I assure you, take legal action. And I would win. But as Infocom are based in the United States I can only hope that through your columns I might advise other potential customers not to make the mistake I made, and ask them to learn from my experience. It is in the interests of us all that such Companies are publicly identified for what they are.

I do not know what they call INFOCOM's sort of sharp business practice in the USA. In the United Kingdom I know that we call it disreputable, or we are blunt about it and call it theft.

Stewart Martin
Mansfield
Nottinghamshire

A frustrating tale indeed. We are looking into the matter and will publish a reply from Infocom if forthcoming.

Dear Editor

In the March 1984 issue of your magazine, on pages 60-61, there appeared a program listing for a short utility to "catalog" the directory at a disk to screen. I carefully typed in the basic-data statement program, ran it, and SYS'ed 49946, and got a "Ready" on the screen. I then checked the machine code utilising a monitor program and found the code to check with the listing on page 61.

The problem is that it ("Catalog" program) will not list the disk directory.

Is there a problem with the program listing (both)? I found this copy of your magazine while on vacation and have not been able to find another subsequent issue to see if you printed a correction. If there was a mistake and a program correction is available, please could you send it to me. Thank you very much.

John Stahl
New York
USA

Catalog requires that the disk command routine be in memory as well (published in same issue) as a subroutine in Disk to find a free file number is used.

Dear Editor

It has come to our attention that "Interceptor" have just launched a software package called "Super Basic".

I would like to inform your readers that this Super Basic has nothing to do with our own "Super Basic".

I hvae already contacted Interceptor without protest and advised them to take greater care in future.

I know nothing of the quality of this pseudo "Super Basic" but if it comes close to our own standard then the buying public will be lucky indeed.

Gala-Soft
Canvey Island
Essex

Dear Editor

I am slowly going round the twist!

I have a VIC 20 with a Stack RS232C Interface attached to the back. I also have a Brother CE60 daisy wheel printer which connects to the VIC 20 via a Brother cable and its interface. The printer accepts both RS232C and Centronics parallel, but the whole shooting match fails to come alive!

The Stack interface has a 25 pin male plug on the back of it and so, unfortunately, does the Brother cable.

However by VERY careful soldering I have paralleled off the pins so that the cable will accept a 25 pin socket. It still fails to operate. I know not why.

Can you please throw some light on the subject, I should hate to think that Commodore have led me up the garden path.

A A A Clack
Cirencester
Glos

We have re-printed this letter, which was previously published in the September issue, as we have now heard that the answer can be obtained from:

Bernie Ratcliffe,
Whitby Community Projects,
The Mount School,
Khyber Pass,
Whitby,
N. Yorks. TEL: Whitby 604148

Dear Editor

Could you please help me with the Synth Sounds program by Bo Svensson, I keep getting illegal quantity error in line 780 and Syntax error in line 1940 when listing, I have checked the list three times.

Thomas Sloane
Newry
Co Down

Check it again.

There are no errors in this program. Illegal quantity and the Syntax error suggest a mistake when entering the data at the end of the program. Check the data for missing commas etc.

THE ADDRESS TO WRITE TO IS:
QUERIES, Commodore Computing International,
Finsbury Business Centre,
40 Bowling Green Lane, London EC1
THE TELEPHONE NUMBER TO CALL IS:
01-278 0333 (remember – Thursday afternoons, 2 pm till 5 pm)

CANADIAN REPORT

"Commodore owners will find it the most important computer book they own..."

The Best of Torpet — a major book and diskette production is arousing great interest in North America. Bruce Beach, of Canada's Torpet user group recounts the crises and triumphs of Commodoreland's own user club and its publication.

The fates willing, The TORPET will reach its fourth anniversary in December 1984. From small beginnings; there were only 75 subscribers for the first issue, The TORPET has now grown to a sixty thousand reader mailing list.

The TORPET gets its name from the words TORonto, the city where it began, and PET the name of a computer that is no longer made by Commodore. The first readers of what was initially a four page newsletter were the 75 owners of PET computers who had formed the Toronto PET Users Group.

The Toronto club grew very quickly, largely because it had an outstanding guru in Jim Butterfield, who, through both The TORPET and other Commodore magazines, became famous to PET users throughout the world.

Mainly because of The TORPET, the contributions of Jim Butterfield, and the efforts of David Hook in building a large public domain library of PET computer programs, the club grew to the point where most of its members were outside Toronto. Indeed, it had actually become an international club with members in over thirty different countries.

In many ways the history of The TORPET is the history of The Toronto PET Users Group and vice versa. The TORPET was sent to the club members until the readership was over twelve thousand at which time The TORPET became a separate publication and the club began to publish its own magazine.

For a while The TORPET became a controlled publication going to Commodore dealers for distribution to their customers. It was at this time that its circulation grew to over thirty thousand. The TORPET has now become a requested circulation publication going to highschool students in Canada. At one time over fifty percent of The TORPET's circulation was outside of Canada but now once again over ninety-five percent is inside Canada. All a part of its identity crises.

Initially, the only subject discussed in The TORPET was PET computers. As Commodore phased out the PET and brought in the VIC the subject matter of The TORPET also changed. Now Commodore has discontinued the VIC and the Commodore 64 and other models have gained a prominence. Changes such as these have often been to the chagrin of older readers of The TORPET who have not bought the new computer models as they became available.

The initial readers were more or less rabid computer buffs but this rapidly changed as more and more of the general public began to buy computers and The TORPET. Consequently the editorial content of The TORPET made a similar transition.

The first cummulative volume of The TORPET was called The Whole PET Catalog and it dealt with only the PET and the VIC. The most recent cumulative volume deals almost exclusively with the Commodore 64 although much of what it has to say is relevant to VIC computers and many of the articles are, of course, applicable to computers in general.

Most new Commodore computer owners, and many older ones, will find THE BEST OF THE TORPET the most important computer book that they own. If a user bought his/her Commodore 64 computer after the model transition took place and therefore missed out on all the discussion by the original first users then THE BEST OF THE TORPET is the book that gives them the chance to catch up.

Even older users find the volume extremely useful because everything is gathered together in one place, and in an orderly manner. In addition to well over one hundred articles on every conceivably related subject there are numerous programs listings and descriptions and one of the best and most convenient compilation of computer maps to be found anywhere.

There are descriptions and sources given for what the editor thinks are the 1000 best free public domain programs available anywhere. Many of the articles are extremely entertaining, and the book is even liberally sprinkled with cartoons, as are most issues of The TORPET.

What are the current trends for The TORPET? Well, its readers are becoming younger, more sophisticated, and more cosmopolitan in their computer interests. Today the interest in robotics is probably at about the same level as was the interest in personal computers five years ago.

The TORPET will be watching the trend. It could be that in a few years it will be almost entirely devoted to robotics and that there will be a PET robot named TOR. Life is strange that way, and the computer revolution is even stranger.

SPECIAL OFFER

Commodore Computing International is able to offer its readers, **exclusively**, at a considerably reduced price, 'The Best of Torpet' Book & Diskette. 320 pages long, the book contains a mass of important material and programs previously unobtainable outside Canada, Commodore's home country.

Contributors, including Jim Butterfield who provides a substantial amount of valuable information and guidance. CCI readers can purchase this exciting volume and diskette for only £13.99 — **more than 25% reduction on the retail price of £18.95!**

This outstanding production is only obtainable at this price through **Commodore Computing International**. As Bruce Beach says... 'Commodore owners will find it the most important computer book they own...' Supplies are limited. **Order your copy today!**

Please send:

☐ Copies of 'The Best of Torpet, Book and Diskette, at £13.99 each

☐ Copies of the 1985 Commodore Reference Diary at £2.95 each

☐ Cheque enclosed

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Charge No: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

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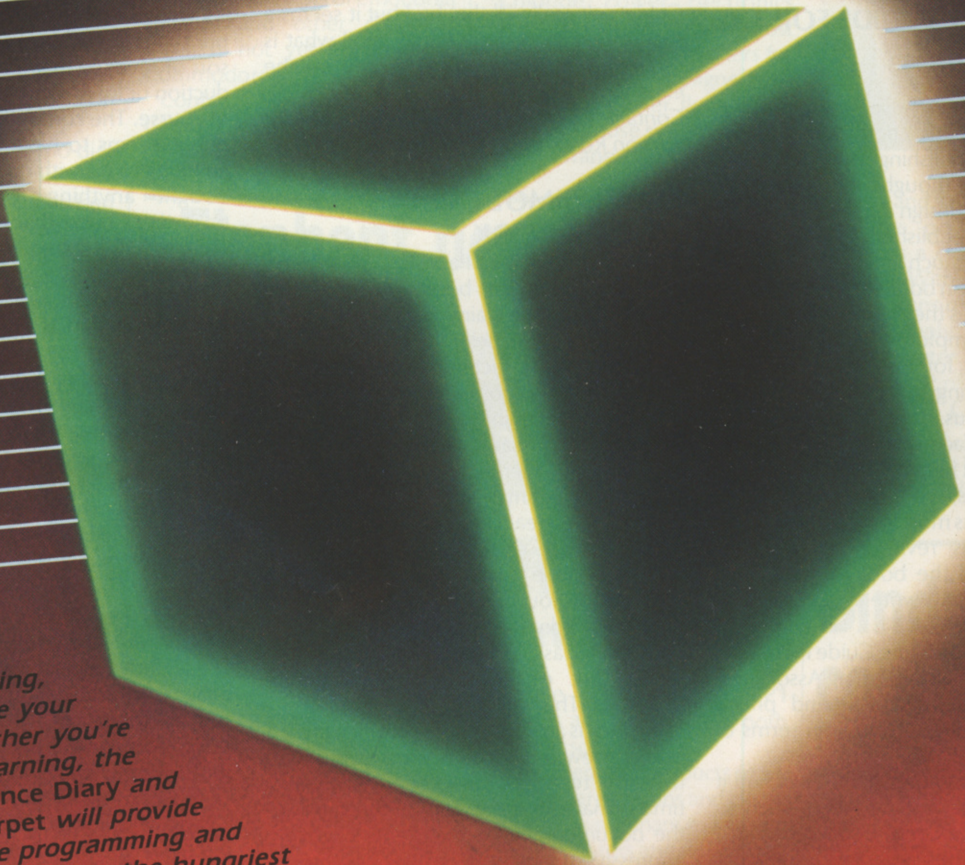
TWO NEW DIMENSIONS



Here are two exciting, new ways to adore your Commodore. Whether you're a master or just learning, the Commodore Reference Diary and The Best of the Torpet will provide hardware, software programming and information to satisfy even the hungriest Commodore appetite.

Commodore Reference Diary 1985
Jim Butterfield

Commodore Reference Diary 1985 *is both a computer reference book and date book — the perfect combination for any computer enthusiast. In a handy, pocket-sized format, the diary features a whole week per page spread with plenty of room for those important daily notations. The reference section, written by computer expert Jim Butterfield, features programming for the Commodore 64, Vic 20, PET/CBM Series, B-Series, new Commodore Plus/4, and much more! A compact counter top display bin is included with orders of 12 or more Diaries. Height: 7-1/4'' 18.4 cm. Width: 4-5/8'' 11.8 cm. Length: 4-1/2'' 11.4 cm (displays 12 Diaries) 152 pages*

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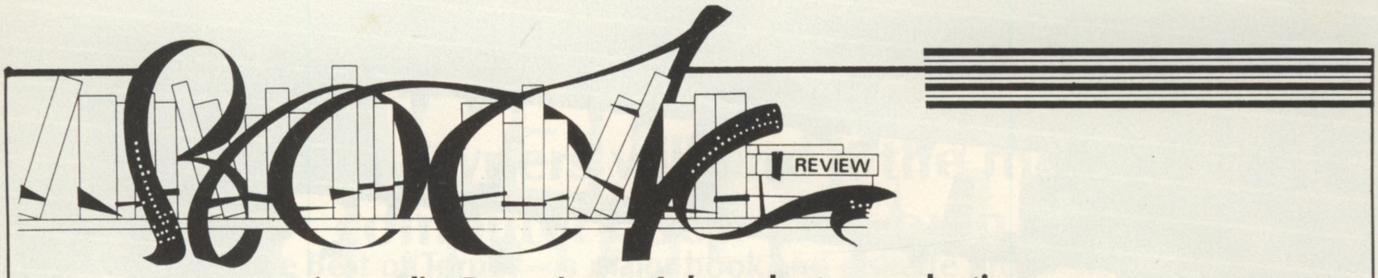


Computer journalist Peter Arnott-Job evaluates a selection of newly-released computer books.

THE COMPLETE GUIDE FOR THE COMMODORE 64

First a question addressed to publishers about current production standards in computer book publishing. Why do most of you put so little thought into typefaces, binding, printing, design and all those other little 'extras' that publishers of other books seem to spend so much time on. Your books are no cheaper than books in other categories – in many cases they're more expensive.

Take the Complete Guide for the Commodore 64, for instance. The cover design is interesting but that seems to be where any serious thought about design ended. The typeface is flat and boring and the layout doesn't help to make things clear. Trivial complaints, you may say. And if you're as cynical as most journalists you'll be thinking that this reviewer couldn't be bothered to read the book and the only thing he could find to write about was how the book was made.

Not guilty. The Complete Guide for the 64, published by Phoenix Publishing Associates, written by Spencer Bateson and priced £9.95, is actually a good book in terms of content.

Advanced programmers might not find it all that useful but anyone who's keen to learn enough about Commodore 64 Basic to write amateur games programs using what everyone calls 'the excellent sound and graphics capabilities of the 64' (as if no-one wants to do anything with the 64 except draw pictures and make noises) should find this book a great help.

The writing has a chummy sort of feel to it which chummy people undoubtedly enjoy. Still, everything is explained clearly and it is easy to understand. Starting with a look at the best way of setting up of the computer and a tour around the keyboard, the author runs through Basic as amended by Commodore for the 64. He explains the language keyword by keyword which makes it a good reference book for those feeling their way. But it isn't a programming tutorial. It tells you a lot about Basic but not a great deal about programming. Around a third of the book is devoted to the sound and graphics capabilities of the 64 and there are several useful appendices. All in all, it's food as far as it goes but I would hesitate to call it a 'complete' guide.

So why criticise the production if the contents are good? Well, the general public might not know a great deal about the principles and practicalities of book production, but if the book doesn't look good then why should we believe the contents are any better? The Complete Guide isn't really all that bad but it seems a shame that those little things spoil what is otherwise a good book, if a little on the expensive side.

Contact: Phoenix Publishing Associates, 14 Vernon Road, Bushey, Herts WD2 2JL.

THE COMMODORE 64 PAYROLL BOOK

'The Commodore 64 Payroll Book is unlike any other computer book you have seen before.' That's the claim of the introduction and for once, it's true!

In fact, it's not, strictly speaking, a book at all. It is a couple of pieces of software in book form. (No quibbles about definitions of books and software, please – you know what I mean). There's a program called Payroll and a program called Personnel Records which you're meant to key in yourself. That's why the price of the book is so high – £19.95. You're actually paying for the software. If you don't fancy keying in the programs, admittedly a boring and time-consuming task, you're invited to write off for a disk or cassette containing the programs. This will cost you an extra fiver.

The idea is an interesting one. Since this is a book review and not a software review we'll leave the testing of the software to another time. Whatever the quality of the software the documentation is excellent. One very impressive thing about the book is the fact that if you do choose to type in the programs yourself you're almost certain to learn a great deal about programming in general. Roger Valentine provides a good, comprehensive commentary on what the program is doing. This means that you're far less likely to make mistakes. True, it may take a time to type in the whole lot but it will be time well spent and at the end of the day you'll not only have a couple of useful programs, you'll also have a better understanding of programming.

Sorry to have to round off with a couple of complaints. I'm afraid it's slapped wrists for lack of thought in production again. Now this is a book containing programs which you're meant to copy. But the binding is the sort of binding where each section of 16 pages is stitched and then the sections are bundled together and glued into the cover with some indestructible super-tough plastic substance which makes it absolutely impossible to open the book flat. To do the job properly you have to break the spine of the book, otherwise it will keep springing shut. The typeface is a 'typewriter' typeface and it looks cheap. A lot of documentation uses similar typefaces because it's actually printed using a typewritten original. It's cheap and it looks it.

The argument would be, of course, that print runs aren't big enough to generate the sort of revenue that justifies expensive production or lower prices. It's a tough market, of course. The competition is fierce. But the public seems to have been so greedy for anything to do with computers that they've bought anything – no matter how trashy.Let's hope that the public (and that means YOU!) is becoming more discriminating and that the con men of computer publishing are on their way out of business. What is needed is fewer books of better quality.

Judging by this month's crop of books things are looking up. None of them fall into the trashy category and all the publishers have tried to provide something useful for the readers – as well as (hopefully) profitable for themselves!

Contact: V & H Computer Services, Mayfield House, Spencer Street, Bognor Regis, West Sussex PO21 1AP

BASIC AND FORTH IN PARALLEL

These little books published by Bernard Babani are interesting. There's a whole series of them and you may have seen them when you've been browsing in the bookshops. Books in the Radio, Electronics and Computer Books series are usually relatively inexpensive given the outrageous prices often charged for computer books. This one is £1.95. They are usually fairly small books, this one is 95 pages, and therefore cannot make too many concessions to the absolute beginner – unless, of course, the title says so.

The series is full of good ideas and Basic and Forth in Parallel is one of them. As might well be obvious from the title, the author, S J Wainwright attempts to explain Forth by comparing it to Basic. It is, of course, a very different language with, as Wainwright points out: 'A different philosophy of program development'. Forth is mainly used to control and monitor laboratory experiments, hardly surprising since it was originally developed by Charles H Moor to control radio telescopes.

Unfortunately the Forth-Stack Simulator contained in the book has been written for the 16k or 48k Spectrum (stop sniggering at the back!). As the Stack is so important in Forth the simulator is a good idea which should be a considerable help and is intended to be used in conjunction with the text. Don't be put off, however, because the book can be used as a study aid without the simulator.

Contact: Bernard Babani (Publishing) Ltd., The Grampians, Sheperds Bush Road, London W6 7NF

PRODUCT UPDATE

Let's be practical!

A weight watcher program, personality test, psychic ability tester, quiz games and an astronomy package — all under one roof and all the effort of Mirrorsoft software publishers to enter the home software market.

The five portions of the package are available individually for £9.95 on cassette and £12.95 on disk, where available.

The Joffe Plan is a no-diet weight control system for slimming without dieting. Devised by Professor Justin Joffe of Vermont University, the plan places emphasis on better eating habits and on increasing the metabolic rate with more daily activity.

First, the program defines specific eating problems. Then it produces a personal plan tailored to fit individual, realistic weight loss needs and lifestyle taking into account current weight, height and age. A credit and penalty system and close monitoring give encouragement, while a booklet by Joffe explains the system further.

Know Your Own Psi-Q is based on research by Professor Hans Eysenck and Carl Sargent, authors of the recently-published book of the same name. It features a series of tests and games to assess one's psychic ability in clairvoyance and precognition. A relaxation routine generated by the computer produces a set of results which can be analysed to determine whether psychic powers are present.

Master Mind and Quizmaster allow up to four competitors to answer two minutes worth of specialist subject questions and two minutes of general knowledge. For the 64, only the cassette version is available and includes two sets each of specialist and general questions/answers. The cassette can be supplemented later with further question/answer cassettes.

The Quizmaster portion is a question generator program which creates data files for use with Master Mind. Cassettes cost £9.95 and £5.95 for the Editor.

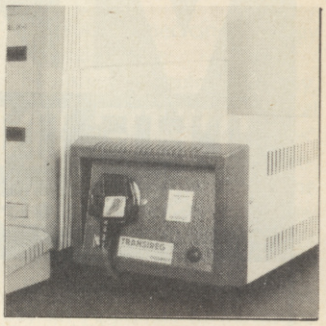
Star Seeker and Solar System make up a pair of programs written by Dr Paul Phillips and published in association with the London Planetarium.

Star Seeker plots the most prominent stars seen in the night sky from any position on earth at any time in this and the next century. Solar System does the same for the planets and plots the course of Halley's Comet.

Know Your Own Personality, a series of three tests of emotional stability and other character traits, is not yet available for Commodore.

Contact: Mirrorsoft, Holborn Circus, London EC1P 1DQ. Tel: 01-353 0246.

Steady as she goes

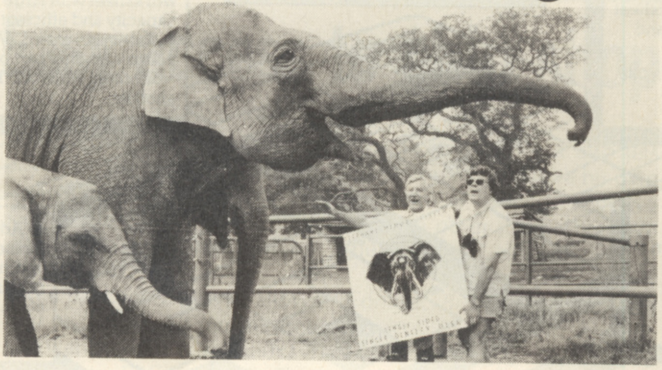


Fluctuations in power supply to microcomputers can be frustrating at best and at worst, cause data or program corruption, system crashes, even permanent hardware damage.

Chloride Power Electronics have developed a low cost range of power conditioners for microcomputers designed to smooth out power fluctuations that might cause system failures. Called Transireg, it is not a micro, and software on disk or standby power facility but provides a clean, regulated AC supply. With cost starting at £180, Transireg plugs into the mains supply and connects to the computer via a 13A socket on the front of the conditioner.

Contact: Chloride Power Electronics, Barton Park Industrial Estate, Eastleigh, Hampshire SO5 5RZ. Tel: 0703 610311.

Elephant never forget



An American diskette manufacturer has entered the UK market with the slogan "Elephant never forgets".

The '100 percent error-free disks', made by Dennison and marketed under the Elephant Memory Systems trademark, are said to withstand at least 12 million passes. They are available single or double sided and in single, double and 96 TP1 densities and are made in both hard and soft format.

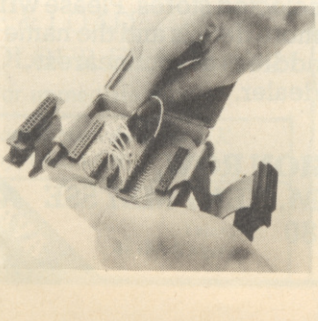
Other Elephant products to be marketed are ribbons and cleaning and maintenance kits for screens, printers and disk drives.

Contact: Dennison Manufacturing Co Ltd, Colonial Way, Watford, Herts WD2 4JY. Tel: 0923 41244.

Get it together

Two products from Inmac will help you supplement your RS232 and Centronics equipment with cable connections and gender changes.

Cable Matcher is plugged in between the two cables that are to be linked together. Jump leads then mix and match the pin configurations as required. Cable Matcher is available in two versions: the first has one male and one female connection and costs £45; the second costs £75 and has two fly cables both of which have dual gender connectors.



Inmac also stock gender changers for connecting like-gendered Centronics (parallel) 36 pin cables together. Fully guaranteed for three years, they are available in either male-male or female-female form and each is shielded with strain reliefs. Cost is £35.

Contact: Inmac (UK) Ltd, Davy Road, Astmoor, Runcorn, Cheshire WA7 1PZ. Tel: 09285 67551.

Binding contract

For major software suppliers and those with lots of software to store, Associated Computer Supplies Ltd has set up a customised software binder service.

The binder service is for software manuals and similar documentation in a linen-look fabric with other materials available as options. Buyers also can get pockets to hold floppy disks or cassettes, and printing can be done on slip cases as well as binders.

ACS also are offering a new fully adjustable computer work station for £59.80. Said to be suitable for home, school and office use, it comprises two fully adjustable shelves large enough to take most VDU's and television sets measuring up to 14 inches. The work station is finished in dark brown with simulated teak work tops and fitted castors.

Extra shelves for disk drives, tape cassettes and printers cost £13.80 each or £15 including under-shelf paper rack.

Contact: Associate Computer Supplies Ltd, Bowmaker House, Etruria Road, Hanley, Stoke-on-Trent, Staffs ST1 5NH. Tel: 0782 287121 or 01-953 5001.

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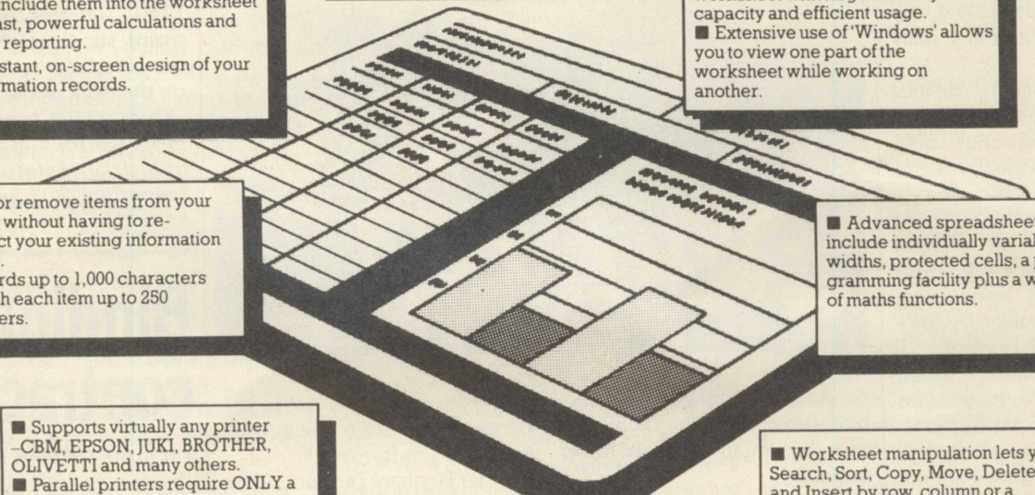

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64 speaks Arabic

With the help of a new language kit consisting of a cartridge and software, the Commodore 64 is speaking Arabic.

Alphacrete Electronics Ltd has developed the kit aimed initially at Commodore users in Arabic speaking countries such as Saudi Arabia, Bahrain and Kuwait. The product may be of most use to language teaching centres where the English/Arabic combination is used. Full Basic commands as well as operating system commands, diagnostic and error messages are available, all in either English or Arabic.

Aplhacrete's Janet Hasso says the keyboard is adapted to Arabic using labels that stick onto the keys. The user has the option to use English or Arabic on the screen at any time. Since Arabic is written from right to left, the cursor automatically goes to the right side of the screen for Arabic and back to the left for English.

The machine loading cartridge, which plugs into the back of the cassette come with a user manual, all for £70 and no hardware modifications are required. Mrs Hasso says Alphacrete intends to design further software in Arabic such as a word processor and educational packages.

Commodore say they are looking at the kit to determine possibilities for future co-operation with Alphacrete.

Contact: Alphacrete Electronics Ltd., 32 Eveline Road, Mitcham CR4 3LE. Tel: 01-640 5515

Old arguments

An artificial intelligence researcher and a leading writer have joined to shoot down the old argument that computers cannot create knowledge.

In their new book, The Creative Computer: Machine Intelligence and Human Knowledge, Donal Michie and Rory Johnston base their argument on the new technology of "expert systems", computer programs that give the computer the ability to explain reasoning behind various expert pronouncements in fields such as medicine, geology and engineering.

Publishers Penguin Books say, "Instead of presenting technical developments as "black boxes" the authors explain, in an appropriate amount of detail for the intelligent lay reader, how they work, so he can judge the book's claims for himself".

The Creative Computer includes an Appendix to introduce and define various computing concepts for the lay reader, intended to be read before the rest of the book. The book is described as having an "urbane, literate style", addressing issues on philosphy, religion, ethics, psychology, the arts and politics.

Michie is director of the laboratory at Edinburgh University where much research has been done on artificial intelligence over the years. Johnson is a science writer who contributes to national newspapers, television and radio.

Contact: Viking Press, Penguin Books Ltd., 536 King's Road, London SW10 0UH. Tel: 01-351 2393

Easy access to chip shop

Broadcasting Support Services say they have upgraded their Basicode 2 translation kits for the Commodore 64, Pet 3000, 4000 and 8000 series and the expanded VIC20.

The Basicode 2 plus kit allows you to record and run the free software that is broadcast weekly on BBC Radio 1's Chip Sho. Costing £4.95, it also lets the user write and save his own programs in Basicode and give them to other users who have the Basicode 2 plus kit.

Contact: Broadcasting Support Services, 252 Western Avenue, London W3 6XJ. Tel: 01-992 5522

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Modifying of sorts

Dramatic differences can be made by modifying sorts so that they sort Pointers rather than the original data. M C Hart shows you how with two well-known sorts.

Most sorts, including the well-known QUICKSORT and SHELLSORT, work by comparing elements of an array and then exchanging them at some stage in the sort — after repeated exchanges the sort is eventually completed. This does have a disadvantage in the CBM machines which can generate a lot of redundant strings and the subsequent 'garbage collection' takes valuable time and reduces the efficiency of the sort.

Two well-known sorts have been modified so that whilst the elements of an array are compared, what is actually swopped is not the element of the string array itself but a pointer to the string (this mimics a little what happens in BASIC4 string handling). This can reduce sorting times considerably, particularly with arrays of 750+.

In the demo provided, 10 character random element strings are fed into an array X$() whilst an index number is fed into a supplementary array, X(). The data in the original data is not disturbed at all but eventually the 'pointer' array will contain data which enables a sorted list to be printed out.

The table below gives some idea of the various timings that can be obtained (C-64). For smaller sorts, you may prefer the three line economy of the SHELLSORT whilst for much larger sorts the QUICKSORT (which uses a stack to continually partition the data) comes into its own. Notice in particular the dramatic differences between a QUICKSORT and a QUICKSORT+ POINTERS once we get arrays of 1000 strings.

Timing Table — C-64

Type of Sort	**Time (in seconds)**				
No. of strings =	*100*	*250*	*500*	*750*	*1000*
SHELLSORT + POINTERS	23	70	165	289	397
QUICKSORT	16	45	120	297	620
QUICKSORT + POINTERS	18	51	113	178	319

```
SHELLSORT/QUICKSORT..WITH POINTERS


1 REM SHELLSORT/QUICKSORT..WITH POINTERS
2 REM ---WITH POINTERS---
3 REM
4 REM   BY  M. C. HART
5 REM
6 J=0:L=0:K=0:R=0:S=0:REM QUICKSORT
7 L=0:H=0:M=0:K=0:Z=0:A=0:J=0:REM SHELLSORT
8 :
10 GOSUB20:GOSUB100:CLR:GOSUB20:GOSUB500:END
19 :
20 REM FILL ARRAYS WITH 10-CHARACTER STRINGS
21 :
30 N=20:DIM X$(N),X(N):J=RND(-1)
40 FORJ=1TO254:A$=A$+CHR$(65+RND(1)*26):NEXT
50 PRINT"ORIGINAL DATA...":PRINT
60 FOR J=1TON:X=INT(RND(1)*240)+1
70 X$(J)=MID$(A$,X,10):PRINT J,X$(J)
80 X(J)=J:NEXT:PRINT:PRINT"SORTING...":RETURN
90 :
```

```
100 REM SHELLSORT + POINTERS
110 :
120 TI$="000000"
130 M=INT(N/2):FORA=-1TO0:FORJ=1TON-M:FORH=JTO0STEP-M:L=H+M
140 K=0:IFX$(X(H))>X$(X(L))THENZ=X(H):X(H)=X(L):X(L)=Z:K=H
150 H=K:NEXT:NEXT:M=INT(M/2):A=(M>0):NEXT
160 T=TI/60
170 PRINT:PRINT"SORTED DATA...":PRINT
180 FORJ=1TON:PRINTJ,X$(X(J)):NEXT
190 PRINT:PRINT"SHELLSORT TIME="T"SECS"
200 PRINT:RETURN
210 :
500 REM QUICKSORT + POINTERS
510 :
520 DIM ST(20,2):S=1:ST(1,0)=1:ST(1,1)=N:TI$="000000"
530 L=ST(S,0):R=ST(S,1):S=S-1
540 J=L:K=R:X$=X$(X((L+R)/2))
550 IFX$(X(J))<X$THENJ=J+1:GOTO550
560 IFX$(X(K))>X$THENK=K-1:GOTO560
570 IFJ=KTHENJ=J+1:K=K-1:GOTO550
580 IFJ<KTHENTE=X(J):X(J)=X(K):X(K)=TE:J=J+1:K=K-1:GOTO550
590 IFJ<RTHENS=S+1:ST(S,0)=J:ST(S,1)=R
600 R=K:IFL<RTHEN540
610 IFS>0THEN530
620 T=TI/60
630 PRINT:PRINT"SORTED DATA...":PRINT
640 FOR J=1 TO N:PRINT J,X$(X(J)):NEXT
650 PRINT:PRINT"QUICKSORT TIME="T"SECS"
660 RETURN
670 :
READY.
```

If you have come across any useful hints and tips, why not share your knowledge with other CCI readers?

Or maybe you have written a program, either in Basic or Machine Code, that you feel is worthy of publication.

CCI welcomes contributions from readers. We will publish any suitable listings ... and pay you for it!

If you have something for publication, we require the program on cassette or disk, together with a printout of the listing and any additional information required.

Please enclose a S.A.E. if you wish to have your program returned to you.

The address to send it to is:

The Editor,
Commodore Computing International,
Finsbury Business Centre,
40 Bowling Green Lane,
London EC1R 0NE.

Don't forget, we welcome programs for the VIC and PETs as well as the 64.

Data Maker/Editor

Avoid the tedium of searching for errors with this program which establishes a general format for long and error prone data statements. It is written by Bob Davies who has also provided an accompanying data editor. Although written for the 64, the author sees no reason why the data maker/editor should not run on the VIC.

DATA MAKER

Easily create DATA statements from a specified block of RAM with this Data Maker routine. The DATA statements can be for machine code or sprite data etc. Once that entire block of RAM is read, the program deletes itself leaving you to add your own READ and POKE statements, and the rest of your program.

Type in the LISTING exactly, and then save it first BEFORE running. When run, four inputs are requested.

1. The first line number you want your DATA statements to start from. This number must not be less than 18 or the program will corrupt itself.
2. The increment between line numbers. This value must not be 0 or exceed 255.
3. The first RAM location of your specified block. Enter this address in decimal.
4. The last RAM location of that block. Again, enter this in decimal.

The DATA statements will appear on the screen one at a time and when complete, lines 1 to 17 will be automatically deleted.

Twelve bytes of DATA are read and the thirteenth byte is a check sum of those twelve bytes. This check sum is included in that DATA statement so someone typing in your program using 'DATA EDITOR' has an instant line by line check.

You can now add your READ, POKE statements to place the DATA values into RAM. Remember every thirteenth DATA byte is a check sum which must not be poked to RAM. The following short program will do this for you.

```
10 RS = ???? :REM RAM START ADDRESS
11 RE = ???? :REM RAM END ADDRESS
12 FOR M = RS TO RE STEP 12
13 C = 0
14 READ D : POKE M + C, D
15 C = C + 1
16 IF C < 12 AND M + C < = RE THEN 14
17 READ D : NEXT M
```

How It Works

1. Get four inputs from user. Calls subroutine: Line 13.
2. Find current line number (LN) and increment (IN).
3. Find ram start (RS) and ram end (RE) addresses.
4. Initialise strings (R$ and D$), count (C) and check sum (CS) variables.
5. Peek ram (P), convert value to string (P$) and find out length (L).
6. Add P$ to D$, increment count, tot up check sum. Check if end of ram is reached (RE).
7. Continue for 12 consecutive ram locations.
8. Add check sum to D$. Print D$. Increment Line number.
9. Calls subroutine: Line 14. Set up keyboard buffer for a cursor home and two returns. END program.

10. & 11. Sets up blank line numbers to self-delete.

12. Find high byte (H%) and low byte (L%) of number (NM).

13., 14. & 15. Find values for LN, IN, RS, RE from array D(3). Store high, low byte values of each variable.

16. Set up keyboard buffer for a cursor home and 9 returns.

17. Data statements for user inputs.

```
DATA MAKER


1 PRINT"□":FORM=0TO3:READD$:PRINT"■"D$;:INPUTD(M):NEXT:GOSUB13:IFLN<18THENSTOP
2 LN=PEEK(822)+PEEK(823)*256:IN=PEEK(824):P$=STR$(LN):L=LEN(P$)
3 RS=PEEK(825)+PEEK(826)*256:RE=PEEK(820)+PEEK(821)*256
4 R$="RUN2":D$="□"+RIGHT$(P$,L-1)+" DATA ":C=1:CS=0
5 P=PEEK(RS):P$=STR$(P):L=LEN(P$)
6 D$=D$+RIGHT$(P$,L-1)+",":C=C+1:CS=CS+P:RS=RS+1:IFRS>RETHENR$="RUN10":GOTO8
7 IFC<13THEN5
8 P$=STR$(CS):L=LEN(P$):D$=D$+RIGHT$(P$,L-1):PRINTD$:LN=LN+IN
9 GOSUB14:PRINTR$:POKE631,19:POKE632,13:POKE633,13:POKE198,3:END
10 PRINT"□";:FORM=1TO8:PRINTM:NEXT:GOSUB16:PRINT"RUN11":END
11 PRINT"□";:FORM=9TO17:PRINTM:NEXT:GOSUB16:END
12 H%=NM/256:L%=NM-H%*256:RETURN
13 LN=D(0):IN=D(1):RS=D(2):RE=D(3):NM=RE:GOSUB12:POKE820,L%:POKE821,H%
14 NM=LN:GOSUB12:POKE822,L%:POKE823,H%:POKE824,IN
15 NM=RS:GOSUB12:POKE825,L%:POKE826,H%:RETURN
16 FORM=1TO9:POKE631+M,13:NEXT:POKE631,19:POKE198,10:RETURN
17 DATA START LINE NUMBER,INCREMENT,START RAM ADDRESS,END RAM ADDRESS

READY.
```

DATA EDITOR

How often have you sat down for hours and typed in long DATA statements from a listing, and eventually (after saving it, I hope) tried to RUN and saw messages like "OUT OF DATA ... ERROR!" or "ILLEGAL QUANTITY" ?. Dreadful, isn't it. I know the feeling. Well, this utility enables you to enter those long boring DATA statements easily, checking each DATA line as it is entered. Any error detected and the program will prompt you to re-enter that line. At the end you will have entered all those statements correctly with minimum fuss, but more importantly, they will be correct.

This program can be used to enter ANY 'DATA listing', provided a check sum is supplied at the end of each DATA line and the lines are numbered above 13.

Type in the program, EXACTLY and SAVE it first before running. When run, two inputs are required:

1. Line number: Enter the first line number of the DATA statements. Remember this number must be 13 or greater.
2. Increment: Enter the increment between those DATA statements.

The first line number and "DATA" will appear at the top of the screen. Enter the data values as normal (each value followed by a comma). After the check sum is entered, press the return key. This program then compares the sum of all those values just entered against the check sum. Any error detected and an 'ERROR' message is displayed. You can now see where you went wrong, pressing any key will return the same line number for you to re-enter again. A correct check sum will enter that line into the program and the next DATA statement is now ready to be entered.

When all the DATA statements are entered, press the RUN/STOP key to stop the program. Now DELETE lines 1 to 12 and you will be left with just the DATA statements. Now you can enter the rest of the program and you are assured of a correct bunch of DATA statements.

1. Get line number (LN) and increment (IN) from user. Call subroutine: Line 12. Initialise store.
2. Find current line number, convert to A$, set up D$ and clear check sum (CS).
3. Clear A$, Print D$.
4. Get data from user (K$).
5. If 'delete', remove last character of A$.
6. If 'return', go to line 10.
7. If ',' then add A$ to D$. Tot up check sum (CS). Go back for next number.
8. If input is not a number go back to 4.
9. Add K$ to A$ to form data. Go to 4.
10. Last input was check sum. If this input is <> the check sum then print 'ERROR'. Wait, re-run.
11. Call sub 12. Set up keyboard buffer for cursor home and two returns. END program.
12. Increment line number. Store high, low byte values.

```
DATA EDITOR


1 INPUT"⊐ LINE NUMBER, INCREMENT";LN,IN:POKE822,0:GOSUB12:POKE822,IN
2 LN=PEEK(820)+PEEK(821)*256:A$=STR$(LN):D$=RIGHT$(A$,LEN(A$)-1)+" DATA ":CS=0
3 A$="":PRINT"⊐"D$;
4 GETK$:IFK$=""THEN4
5 IFK$=CHR$(20)ANDLEN(A$)>0THENA$=LEFT$(A$,LEN(A$)-1):PRINTK$;:GOTO4
6 IFK$=CHR$(13)THEN10
7 IFK$=","THEND$=D$+A$+K$:CS=CS+VAL(A$):GOTO3
8 IFK$<"0"ORK$>"9"THEN4
9 A$=A$+K$:PRINTK$;:GOTO4
10 IFCS<>VAL(A$)THENPRINT"▒▒▒ ** ERROR ** RE-ENTER":POKE198,0:WAIT198,1:RUN2
11 GOSUB12:PRINT:PRINT"RUN2":POKE631,19:POKE632,13:POKE633,13:POKE198,3:END
12 LN=LN+PEEK(822):H%=LN/256:POKE821,H%:POKE820,LN-H%*256:RETURN

READY.
```

Chomper gremlin

Sorry! A small error crept into the PET Chomper program published in our October edition of Commodore Games. The following lines should read:

```
6 REM**********************
7 S=0
```

We apologise for any problems this may have caused.

Keeping it secret

If you've written a program and you want to conceal your own special techniques, you will be interested in this autorun routine for the 64 written by Bob Davies.

AUTORUN & PROTECTOR

You've written a program and want to give it to your uncle, auntie or friend to use. But you rather they did not list your program and spot those extra special routines you've spent so long creating.

Well, as many of us are now aware, there are several ways to overcome this. You can add a line to change the LIST vectors by a POKE 775,200 or you can disable the RUN/STOP and the RESTORE keys by a POKE 808,225.

The problem here is that to effect these pokes, the program itself has to be 'RUN' first, which of course defeates the whole object.

The answer then is to 'force' the program to run the minute loading is completed and that is precisely what this utility will do for you. In fact, this program 'creates' an AUTORUN LOADER which in turn loads and runs a specially 'encoded' version of your program.

This is what happens: Once AUTORUN & PROTECTOR is loaded and run, it NEWS itself. You then load your program to be protected as normal. To activate the utility, type in 'SYS 49152' and Return. You will be asked to enter the name of the program to be saved. You will then be asked if you are using DISK or TAPE. The programs are now ready to be saved. Make sure a blank tape is in the cassette or if you are using disk, a file with the same name is NOT on that disk. This utility then saves an AUTORUN LOADER with the name you have specified, and immediately following this, a specially 'encoded' version of your actual program is then saved with the same name but with a "£" added to it.

The whole process can now be repeated as often as you wish.

To load your protected program from Cassette just type LOAD "NAME",1,1 or fro Disk, type LOAD "NAME",8,1. You will see that your actual program (with the £ sign added) is useless without the LOADER and vice-versa, therefore now providing you with a truly protected program. Of course you must not forget to include those special 'pokes' we talked about.

Listing 1 is a BASIC loader for AUTORUN & PROTECTOR. Type it in EXACTLY. SAVE it first before running as it NEWS itself. (Don't say I didn't warn you.) When run, each data statement is printed to the screen. At the end of each DATA statement is a check sum. If an error is detected, then the program will stop at that DATA line so you can recheck the numbers, and just over type that line and re-enter it.

Listing 2 is a SOURCE listing for all you machine code buffs. It is written on a 'PAL' assembler, where the pseudo op-code '.ASC' is used instead of '.BYTE'.

How It Works

To satisfy members of 'GOSH' a detailed explanation is not provided!

The program is entirely in machine code occupying 541 bytes, starting from location 49152. After obtaining the 'NAME' and Device, a load and decode routine (containing its own name and device buffer) is generated to occupy address 679 onwards. This area of ram is then saved, named 'your name'. Your actual program is then encoded and saved, named 'your name + £'. Various pointers are then reset, and the program is ready for using again.

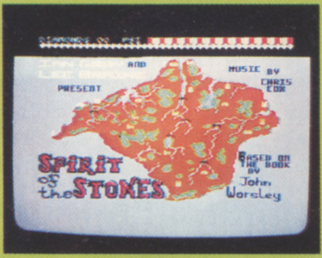
You then load your program by LOAD 'name',1,1. The secondary address of '1' tells the computer to load the program into exactly where it was generated, ie. location 679 onwards. The AUTORUN LOADER is then loaded and in turn, it loads your program. When loading is complete your program is then 'decoded', restoring it to normal. A BASIC 'RUN' statement plus 'return' is forced to the keyboard buffer, thus causing your program to run.

```
5 REM       AUTORUN AND PROTECTOR               (C) B.DAVIS   SEPTEMBER 1984
10 LN=100:IN=10:RS=49152:RE=49692:FORM=RS TO RE STEP12
20 C=0:CS=0:PRINTLN"DATA";
30 READD:POKEM+C,D:D$=STR$(D):PRINTRIGHT$(D$,LEN(D$)-1)",";
40 C=C+1:CS=CS+D
50 IFC<12ANDM+C<RETHEN30
60 READD:D$=STR$(D):PRINTRIGHT$(D$,LEN(D$)-1):IFCS<>DTHENPRINT"DATA ERROR!":STOP
70 LN=LN+IN:NEXTM
80 PRINT"▮▮▮▮ 1. LOAD THE PROGRAMME TO BE PROTECTED"
90 PRINT"▮ 2. TYPE IN 'SYS 49152' AND RETURN":NEW
100 DATA 162,0,189,254,192,32,210,255,232,224,30,208,1988
110 DATA 245,162,0,32,207,255,224,13,176,8,157,32,1511
120 DATA 194,232,201,13,208,241,202,142,31,194,162,0,1820
130 DATA 189,28,193,32,210,255,232,224,35,208,245,32,1883
140 DATA 228,255,201,84,240,25,201,68,208,245,162,0,1917
150 DATA 189,61,193,32,210,255,232,224,32,208,245,169,2050
160 DATA 8,141,30,194,76,97,192,162,0,189,92,193,1374
170 DATA 32,210,255,232,224,32,208,245,169,1,141,30,1779
180 DATA 194,162,0,189,123,193,32,210,255,232,224,93,1907
190 DATA 208,245,32,228,255,240,251,201,3,208,1,96,1968
200 DATA162,0,189,216,193,157,167,2,232,224,69,208,1819
```

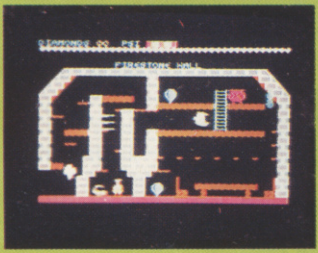
(continued on page 51)

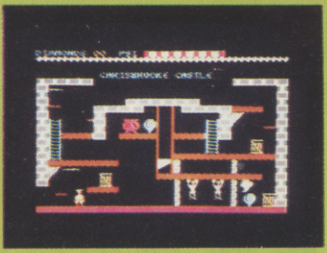
COMMODORE *Games*

NOVEMBER 1984


PRESENT
MUSIC BY CHRIS COX
SPIRIT of the STONES
BASED ON THE BOOK BY John Worsley

Jumping on the Bandwagon Games from TV, films and books

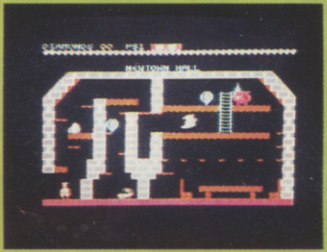


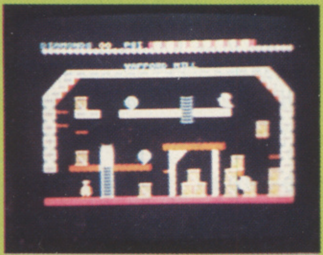

CARISBROOKE CASTLE

The latest news and Top Twenty

Cult of the Programmer

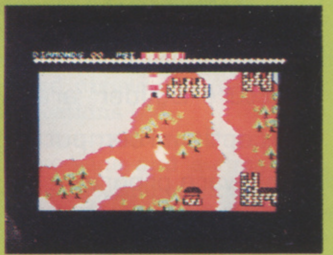
WHIPPINGHAM CHURCH

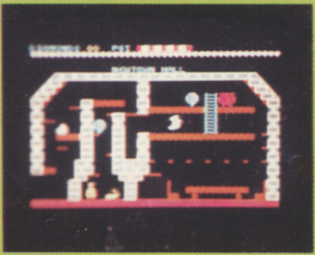


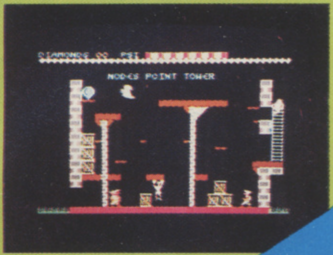


ST. CATHERINES LIGHTHOUSE

NORRIS CASTLE

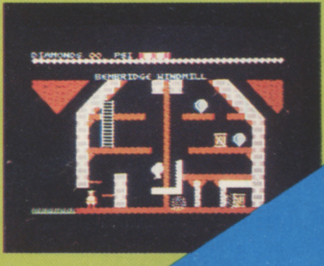





NODES POINT TOWER

PLUS

Masses of reviews and listings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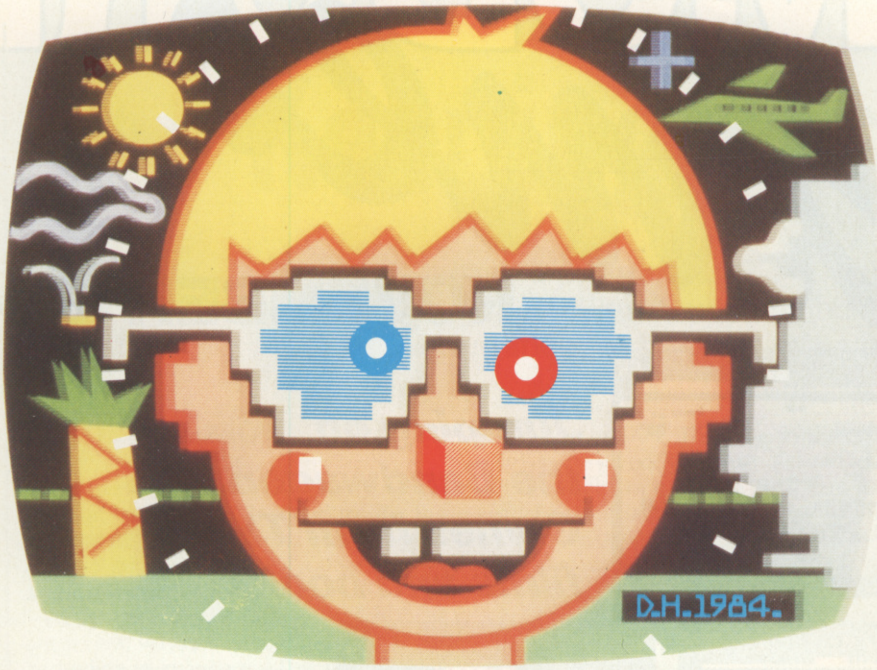

PICTURE YOURSELF ON T.V.

We're not the only people who think 'Art Master' and 'Picture Builder' are two quite exceptional computer graphics software programs.

Tony and Rolf do, too. Otherwise they'd never have agreed to put their name to them.

commodore
COMPUTER SOFTWARE

With both 'Art Master' and 'Picture Builder' you can create full colour pictures on your own T.V. screen.

And believe us when we say those pictures will match the best computer graphics you have ever seen.

Anywhere.

The pictures are drawn using either the keyboard or a joystick, and can be stored on either tape or on disk.

With 'Picture Builder' you are presented with a palette of 121 colour shades (more than enough for any budding Michaelangelo).

And a collection of character sets totalling over 250 shapes.

So you're hardly stumped for choice.

You simply choose your colours and characters, then 'build up' your picture. Just like any other artist.

With 'Art Master' you again get a choice of 121 colour shades.

But this time you can draw whatever shapes you like, creating your very own high resolution masterpiece from a blank screen.

It is even possible to draw circles, and store and then recall a back-up picture – which is more than you can do with other graphics programs.

Everyone, from the six year old right up to the 66 year old, will enjoy 'Art Master' and 'Picture Builder.'

Like all of our software, they have been specifically designed to get the best out of Commodore hardware.

That's why you can't choose better.

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COMMODORING THE STONE

SPIRIT of the STONES
SPIRIT of the STONES

It's the Spirit of the Stones, the diamond that every avid games player will be searching for in Commodore UK's new supernatural adventure game, Spirit of the Stones.

The software package for the 64 gives clues towards solving the riddles in the book of the same name, written by author and artist John Worsley.

Actually, Spirit of the Stones is Worsley's revenge, to some extent. Commodore say he believed that he'd cracked the elusive mystery of Kit Williams' Golden Hare, and when he found he was wrong, he decided to create his own supernatural mystery.

Worsley's hunt focuses on 40 diamond talismen and a larger one, the Great White Eye, hidden on the Isle of Wight, Worsley's home. In the software adventure, the stones are hidden in 21 places, including mills, castles and other structures. Each building operates differently inside, with some walls housing hidden arrows and so forth. Outside, the island is scattered with the usual shrubbery, trees, bridges and rivers. All this looks quite splendid with the help of the 64's graphic capability.

The more complicated mysteries are solved with the uncovering of letters scattered about the island which form words.

A nicely bound and illustrated book comes with the package to give further clues in the form of rhymes and runes (secret writings), among other clever touches. It also tells the story behind the scattering of the stones.

While you may win one of the talismen or the Great White Eye, you also have the chance to win the contents of a kitty funded by 50p donated with each sale of the package, which retails for £14.99 in disk or cassette form. Commodore hope this kitty will amount to £1m.

FUN ON A BUDGET

Two more companies are reducing prices on games software for the Commodore.

J Morrison Ltd of West Yorkshire have lowered the price of all games in their range, including Jellybones and Nightflight simulator games, to £3.95. Also for Commodore machines, you'll pay only £7.95 for Edasm (editor, assembler, disassembler and monitor). BasicPlus or Spritemaster, and Zip will be down to £3.95.

Contact: J. Morrison Ltd, 4 Rein Gardens, Tingley, West Yorkshire WF3 1JR. Tel: 0532 537507.

Hertfordshire based Omega Software are coming out with a new budget line of high quality software. For the VIC 20, there is Gunslinger and for the 64, Apache Raid, Astral Attack and Mr Speedy, all at £1.99. Space Pirate at the same price works on both machines, and the unexpanded VIC 20 will get Battle Ground, available for £1.99.

Contact: Omega Software, 121 London Road, Knebworth, Hertfordshire SG3 6EU. Tel: 0438 811730.

SEA, EARTH and SKY

CRL Group has introduced four new titles for the 64 sports enthusiast.

With a deep-sea diving format, Glug-Glug offers several different levels of play. Cricket 64 and Handicap Golf let the player move fielders about the screen. Showjumping allows you to choose whether you want to jump against the clock or take all the time you want. Each is £7.95.

Contact: CRL Group, CRL House, 9 Kings Yard, Carpenter's Road, London E15 2HD. Tel: 01-533 2918.

PENCIL IN A JOYSTICK

Draw your own graphics on-screen, create melodies and sounds... That's what Activision UK say you can do with their new Designer's Pencil software package from Garry Kitchen. The device is said to work simply for children and adults "by virtually eliminating computer control and complex programming design".

Managing Director Geoff Heath says, "It is impossible to enter a commond the computer does not understand — every likely command is contained on the Command Menu and the user need only position a cursor arrow next to the command he or she wishes to input, and press the "Fire" button. In this way, you build up your own unique program".

The Designer's Pencil costs £11.99 on cassette or £19.99 on disk. A free offer from Activision is membership in the Activision Software Club. Members get a free colour magazine quarterly and the chance to enter competitions as well as getting on the roll of a worldwide pen-pal service.

Contact: Kathy Leonard or Lorraine Vick on Maidenhead (0628) 75171 or write to Activision Software Club, 5/7 Forlease Road, Maidenhead, Berks SL6 1RP.

MIND GAMES

Educational games offering great fun for the learner are the priority for newly-formed Hill MacGibbon software publishers.

Led by Alan Hill and Hamish MacGibbon, formerly of Heinemann Educational Books Ltd, the company plans to expand their list of programs from elementary education to business and professional training and school programs.

The new software series is called "Games to Stretch the Mind" and includes titles like Car Journey (business skills for the young), Ballooning (motor skills), Punctuation Pete (also vocabulary) and Special Agent (learning map of Europe). All these retail for £9.95.

Gun Dogs does not boast particular educational skills but, at £5.95, is said to be "irresistable".

Contact: Hill MacGibbon, St Bartholomew House, 92 Fleet Street, London EC4Y 1DH. Tel: 01-353 6482.

MORE TREASURE

At the same time Commodore is launching its Spirit of the Stones challenge, Haresoft Ltd have announced that the second of its Harereaiser cassettes will be available before Christmas.

Hareraiser players must locate the hidden treasure using clues and logic skills. The game was programmed in two stages, with the cassettes released in intervals. The first to find the treasure wins the Jewel of the Golden Hare or the £30,000.

Hareraiser-Prelude and Hareraiser-Finale sell for £8.95 each.

Contact: Haresoft Ltd, PO Box 365, London NW1 7JD.

ANOTHER WORLD

It's threatened to be "wrist breaking stuff" but great fun nevertheless and the title is "Orpheus in the Underworld". With split screen scrolling and secret passageways through walls, Orpheus is the first installment of games from Sterling Software, the newly formed division of Sterling Publications Ltd.,

A treasure search through 120 screens and a "really nasty collection of hazards" punctuate this game written by Steve Bak for the 64. The cost is £6.95 for cassette.

Contact: Sterling Software, Garfield House, 86/88 Edgware Road, London W2 2YW. Tel: 01-258 0066.

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Famous names

You've read the book, seen the film, sat through the TV series... now play the game! Gearing up to the Christmas market, the latest genre emerging from the software houses are games based on books, film and TV. Sue Pearce and Viola Gienger investigate this phenomenon.

How many times have you watched a film based on a book you have read and come away thinking "It was nothing like the book". The strongest impressions of a story or character are usually gained by the first medium by which they are introduced to people whether it be in book form, film or television.

In the case of books, everyone builds up their own picture of what the characters in the story look like, and this is bound differ.

The software houses, then, have set themselves a challenging task in producing games that relate to books, film and TV series. In the case of films and television, people know what characters should look like, so programmers have to create graphics to live up to expectations.

How closely can a game relate to a popular story? Those stories based on war, be it on land, sea, in the air or in space, could be depicted by zap 'em arcade games. Other stories suit adventure game treatment. Then the decision has to be made on whether to stick close to the original story. If it is too similar then those familiar with the story may find it too easy to predict moves while those unfamiliar with the story may miss obvious clues.

It is also arguable how many computer games are actually written for the title. Some bear so little resemblence that it suggests that the title has just been stuck on a game which has a few similarities to the story. I remember when a video game of Jerry Anderson's Terrahawks was first released. It turned out to be a game put out under that name purely because a face that appeared at the end of each screen vaguely resembled the evil Zelda. I trust that the version of Terrahawks expected to be launched for the 64 by CRL in the near future is better than that.

Ghostbusters — guaranteed success?

However, there are some interesting games coming out. One game that is guaranteed to attract a lot of interest is Ghostbusters, being released by Activision this month. With the theme tune to Ghosbusters already high in the charts, it is interesting to note that the game based on the much-hyped film is being released before the film itself.

Activision's managing director, Geoff Heath, says that the response prior to launching the game has been overwhelming with youngsters and retailers alike clammering for it. And he says the terms used in the games — ghosts being referred to as slimers and the bad guys as marshmallow men — won't be a problem despite the later release of the film, scheduled to hit the UK in early December.

"The thing with kids is that they are so switched on to it", Heath says. "They know what marshmallow men are... the game does stand up".

Activision is just one of the software houses jumping on this new bandwagon.

Melbourne House was one of the first with their immensely popular adventure game, the Hobbit, based of course on Tolkien's book of the same name. They have followed this success with the recent release of a Sherlock Holmes game based on the famous detective's cases.

Palitoy released Star Wars, enabling you too to battle against the mighty Darth Vadar, the baddie you love to hate in this space-war extravaganza.

US Gold's soon-to-be released Quest For Dallas looks set to do well. Or if you prefer Kung-Fu to oil wells and stetsons, US Gold also has a Bruce Lee game.

DK'tronics is following up its release of Who Dares Wins, with an interestng batch of TV-based games. A Popeye game for the 64 is being released this month and games based on the popular TV series Minder, The Sweeney and Benny Hill are due out in early 1985.

In addition to acquiring the rights to TV puppet series, Terrahawks, CRL has a Magic Roundabout game due for release this month.

Sci-Fi Origins

I'm personally looking forward to Mosaic Publishing's book-based games. Stainless Steel Rat Saves The World (reviewed in this feature) is based on the book of the same name by Harry Harrison. Erik the Viking is based on the children's book written by Terry Jones of Monty Phython fame. Lastly Nomads of Time is a game based on sci-fi writer, Michael Moorcock's trilogy.

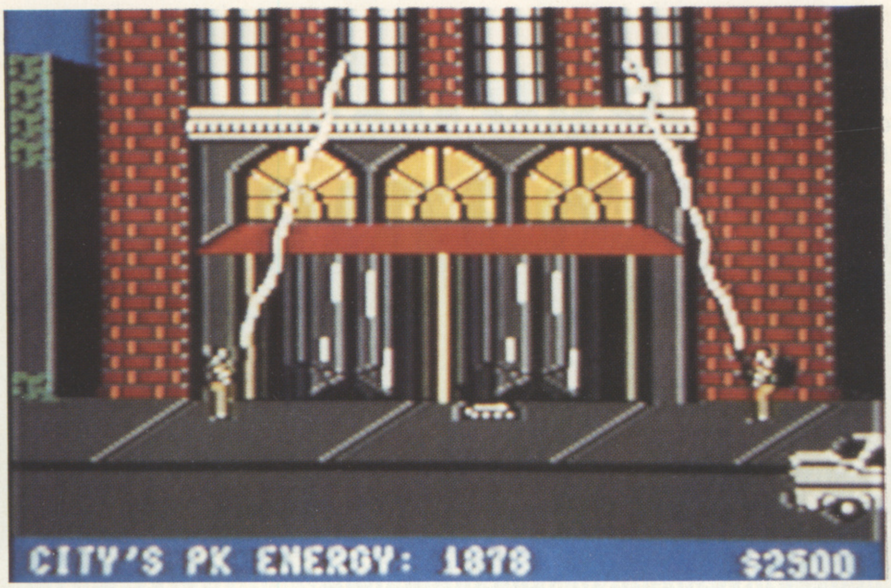
The superb 'horror' film, Evil Dead, directed by 21-year-old Sam Raimi, has been made into a computer game by Palace Software. If you read the games news in the September issue of Commodore Games, you will remember that it seems that the Evil Dead are still not at peace. Programmer Richard Leinfellner had mysterious problems with his disk drive while writing the program and the 64 in our office here at CCI started doing strange things while we were playing the game!

Popular film and TV series, The Fall Guy, is being released as a computer game this month by Twentieth Century Fox through the Elite label. The player replaces Lee Majors as a top Hollywood stuntman. Can you do better? Also coming from ELite is a game based on the Dukes of Hazard.

Back to cartoon-based games. Creative Sparks have two games based on the exploits of TV super-hero Danger Mouse and his side-kick Penfold.

Adventure International is releasing the second in its Questprobe series based on the marvel comic characters. Following on from The Incredible Hulk comes Spiderman.

As you can see, the list of book, film and TV based games is already growing fast. We will now take a look in more detail at some of the games mentioned above.



GHOSTBUSTERS

It may be the cheer of the year. You've been looking at the logo for months. You've heard the theme song for weeks. Now, before you even get a peak at the movie, comes the inevitable – a Ghostbusters computer game.

Fortunately, it lives up to the hype. From the bouncy theme song to your personal Ghostbusters franchise account. Activision and programmer David Crane (of Decathelon and Pitfall I and II fame) have put together an entertaining package. Excess credits and such are gotten rid of during loading, which is quickened by the Flashload feature. At the beginning of the game you can sing along with the electronic music by following the bouncing ball along the lyrics on screen. Pressing the space bar yeilds the Ghostbusters! cheer to punctuate the tune at the right places.

Your goal is to make as much money as possible by zapping ghosts and getting to the top of the tower of the dreaded Zuul before it's too late. But rather than make you start from scratch, the games gives you a £10,000 loan with which you buy a vehicle and traps to catch the ghosts, the amount and quality of which depend on how much of your money you think you can recoup during play.

The account is one of the intriguing features. If you end a game with more money than you started with, Ghostbusters gives you an account keyed to your name and account number and it will start you out with the balance you had at the end of your last game. Sounds rather impossible until you realize that your account number changes each time your balance is different. Aha!

Activision say the game follows closely the film, calling ghosts "slimers" and the bad guys "marshmallow men", vocabulary in the true tradition of the film's stars, Bill Murray and Dan Ackroyd. Status reports of backpack power, number of men and empty traps are crucial bits of information at your fingertips and the Ghostbusters! cheer encourages you anytime you snare a slimer before he slimes you.

Ghostbusters' sound features take advantage of the 64s SID chip, including slurping noises when your contraptions suck up a ghost and the theme song as background while you're tootling along in your choice of compact, station wagon, hearse or high-performance vehicle. And if you lose, the laughter is humbling.

Though you may already have overdosed on Ghostbusters' publicity, the game is well worth the jacked-up price. 'It's playable and enjoyable for the very young or old and graphics and sound touches make this game live up to its word.

Title: Ghostbusters
Programmer: David Crane
Company: Activision UK Inc, 15 Harley House, Marylebone Road, London NW1. Tel: 01-486 7588.
Hardware: 64, cassette player or disk drive, joystick required.
Type of game: Arcade
Graphics: *****
Sound: *****
Playability: *****
Description: Make as much money as possible by trapping ghosts and win game by reaching top of Zull Tower with at least two of your Ghostbusters.
Price: £10.99 cassette, £19.99 disk
CCI Rating: *****

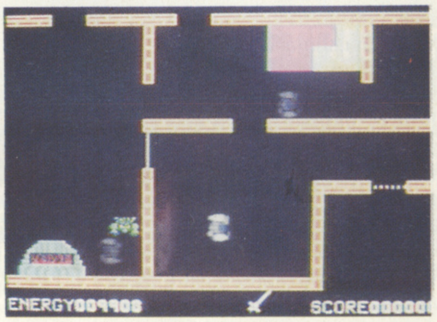
EVIL DEAD

Evil Dead is one of my favourite films, which could explain why I was a mite disappointed with the computer game version. Not that the arcade-style game is not both entertaining and original, but I think the story-line of the film would give justice to an adventure game.

But arcade-style it is, and you are trapped with your friends in a log cabin persued by an evil force you have inadvertantly aroused. Your task is to rush around the cabin shutting doors to keep the force out and battling against fiends which don't die when you zap 'em, but disintegrate into various parts of the anatomy and continue to chase you.

Doors don't stay shut, so as you move around from room to room beware – the evil force may be creeping up on you. And you won't impress your friends by shooting them by mistake. However, should the force reach your pals first, they too will turn into the Evil Dead and come after you.

Your only chance of survival is to find the ancient book.



An aerial view of your surroundings is presented to you on screen and the graphics are simple, but effective. The shutting of doors results in a healthy 'slamming door' sound. (Don't forget to shut each door as you go through it.)

Evil Dead is a fast-moving and addictive game that will get the adrenalin flowing.

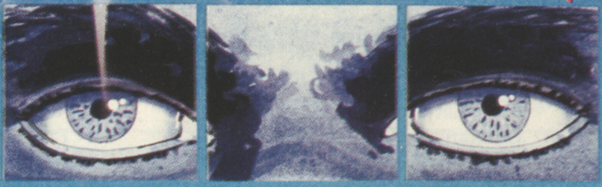
Title: Evil Dead
Programmer: Richard Leinfellner
Company: Palace Software
Hardware: 64, cassette recorder, joystick optional
Type of game: Arcade
Description: Shut doors to keep the evil force out of the cabin long enough to find the book
Fast loader: None
Graphics: ***
Sound: ***
Playability: ***
CCI Rating: ***
Price: £6.99

WHO DARES WINS

The dud award for the month must go to Who Dares Wins, a game that might have seemed quite nice in the dark ages of computer games but just does not compete in today's world.

The game, available on cassette from dk' tronics, shows a red brick house (supposedly an American embassy, though I've never seen an embassy quite so plain) with heads bobbing in and out of the five windows. Your mission is to shoot without harming the hostages. Problem: how to figure out which are the bad guys and which the good? The instructions included in the program

We've got the TALENT



and our games prove it!

Amazing graphics, fast and furious action, challenging strategy, compelling adventure – this first wave of games from TALENT has got the lot!

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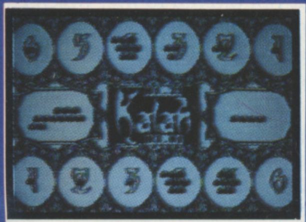
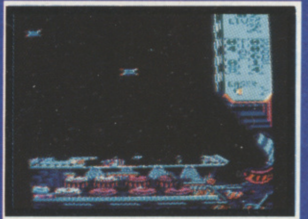
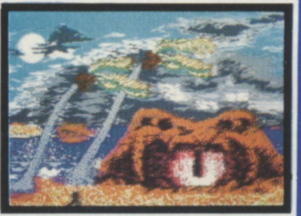
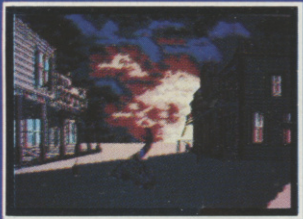
Kalah

ARCHIPELAGO









KALAH

One of the oldest games in the world! Originally played by Bedouins using pebbles and holes scooped in the desert sand, this strategy game has absorbed the mind of man for thousands of years. Superb graphics and music, with a choice of levels and depth of search. Easy to learn, fiendishly difficult to beat!

Commodore 64 **Cassette £7.95 Disk £9.95**

LASER REFLEX

A new angle in alien zapping! Against a brilliant backdrop of stars, you must defend your asteroid base from wave after wave of swooping mutating starships. Your defence – a powerful laser deflected against a giant mirror. How long can you hold out before your defences crumble?

BBC Model B **Cassette £7.95**
Electron **Cassette £7.95**

ARCHIPELAGO

Dare you venture into the ancient undersea labyrinths which link the islands of the Archipelago? Fabulous jewels await you there – but the guardians of the treasure mark your every move, waiting to deal a swift and terrible vengeance. How long can you survive?

A fast-moving, action-packed game with brilliant graphics, animation and music.

Commodore 64 **Cassette £7.95 Disk £9.95**
(joystick needed)

WEST

A compulsive adventure game set in a ghost town in the Wild West. Your task – to flush out a gang of bank robbers and retrieve their loot – with only your trusty steed and your six-shooter to aid you!

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The first of a stunning series of adventure games from Allan Black, played in real-time.

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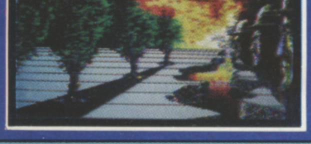

SOFTWARE FROM SCOTLAND

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PANORAMA (H)

An outstanding graphics package for the Commodore 64. Features include: free-hand sketches, circles, ellipses, block move, copy and reverse, magnification choice of cursor, joystick or key control. PLUS texture definition and texture and colour fill. PANORAMA (H) uses the full colour facilities of the Commdore 64.

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certainly don't tell, so your only choice is trail and error – shoot somebody and find out whether it was a hostage if you get demoted.

One wonders what the next demotion below civilian could be – scum of the earth, by any chance? Even on a higher playing level, the figures only move faster over the windows, providing little more challenge and not a single thing new on the screen, quite dull to begin with. The only two sound effects are the firing of rifles and reloading, which reminds me distinctly of an elevator bell.

Might be quite suitable for the beginner. I only hope the film was made on a larger budget than the computer game.

Title: Who Dares Wins
Programmer: Kevin Moughtin
Company: dk' Tronics, Shire Hill Industrial Estate, Saffron Walden, Essex CB11 3AX. Tel: 0799 26350
Hardware: 64, cassette recorder, joystick
Type of game: Arcade
Graphics: *
Sound: *
Playability: **
Description: Kill the terrorists inside the embassy without harming the hostages
Price: £5.95
CCI Rating: **

STAINLESS STEEL RAT SAVES THE WORLD

This illustrated text adventure comes complete with the Harry Harrison paperback book, Stainless Steel Rat Saves The World, on which the game is based.

It's one of the fastest moving adventure games I have yet to come across – perhaps too fast. You're thrown right in at the deep at the very beginning of the game when you find yourself inside an orbiting laboratory which is quickly disappearing bit by bit into a time helix. If you don't type in your first instruction within seconds, you too will die – woe betide you if you are a slow reader. Not only do you have to make quick decisions, but it appears if you make the wrong decision you have very little opportunity for experiment. Often the computer comes up with 'try another object' and then proceeds to cast you into oblivion.

I'm loathe to criticise the game too heavily, as I am sure that the solution must be obvious. Also because I am a Harry Harrison fan and I am already addicted to finding the correct solution despite the fact my mission continually fails before it begins.

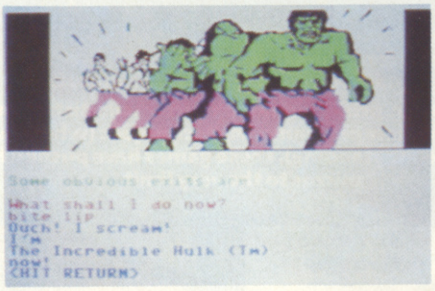
Reading the accompanying paperback book, we are told, is not essential but will provide clues. Just flicking through the first pages will help, but I would recommend reading the book first (it's a great book anyway, so you won't be wasting your time).

The graphics I have seen so far are very detailed and colourful. Sound comes in the form of bleeping noises as the computer replies and as you type in the usual two-word commands. Response is not that fast and I found it necessary to type slower than usual in order to avoid mistakes.

An addictive game which I hope to have more success with once I have read the book!

Title: Stainless Steel Rat Saves The World
Programmer: Shard Software
Company: Mosaic Publishing, 187 Upper Street, London N1. Tel: 01-226 0828
Hardware: 64, cassette recorder
Type of game: Graphics Adventure
Fast loader: None
Graphics: ****
Sound: *
Playability: ***
CCI Rating: ***
Price: £9.95

THE INCREDIBLE HULK



```
Some obvious exits are:

What shall I do now?
bite lip
Ouch! I scream!
I'm
The Incredible Hulk (Tm)
now!
<HIT RETURN>
```

Scott Adam's Marvel characters have been a great success in all medias – in the Marvel comics, films, television and now as computer games.

The first in Adventure International's Questprobe series, The Incredible Hulk, allows you to become Robert Bruce Banner, the physicist whose cullalar structure was mutated by radio active particles during a test detonation of a nuclear weapon. On frequent occasions, he is transformed into the green-skinned super-human, known as The Hulk.

On beginning the game, you find yourself as Banner tied to a chair. Obviously you need to change into the Hulk to free yourself, but discovering how is your first challenge. Your task is to locate all the gems and find somewhere to store them, but you are not alone in your adventure. Characters in the form of friends and foes appear throughout the game. (The accompanying leaflet helpfully informs you who is on your side.)

An illustrated text adventure, the cartoon-like graphics are superbly realistic – detailed and colourful. In particular the transformation into the Hulk and the invading ants.

The response time is also very fast, allowing you to make your next move without delay.

If you think you are going round in circles, a word of advice – don't make assumptions. Follow adventure rule number one – look. Typing help may be of assistance, but more often than not the computer will reply "Sorry I can't do that but ask for a Scott Adams hint book at your favourite store!".

If you get killed off don't despair, by typing 'down' you are brought back down to the ground to continue your quest.

An excellent adventure incorporating much humour, accompanied by a leaflet giving adequate instructions to get you on your way and a history of the Hulk.

Title: The Incredible Hulk
Programmer: Scott Adams
Company: Adventure International, 119 John Bright Street, Birmingham. Tel: 021-643 5102
Hardware: 64, cassette recorder or disk drive
Type of game: Graphics Adventure
Description: Collect all the gems and find somewhere to store them
Fast loader: None
Graphics: *****
Sound: N/A
Playability: ****
CCI Rating: ****
Price: £9.99 (cassette), £13.95 (disk)

DANGER MOUSE IN THE BLACK FOREST CHATEAU

TV cartoon character, Danger Mouse, is the star of this adventure aimed at the young adventurer.

As Danger Mouse, you are given a brief of your mission by Colonel K who heads a department so secret he doesn't know its name. It's groan a minute humour as you learn that a pi-beam is zapping world leaders who are being sent bananas. A sticky situation and DM is relied on to get the world out of this jam!

Off you go to solve the problem with your trusty companion, Penfold. No typing skills are necessary as the computer gives you a set choice of action for each situation. By moving the joystick up and down you select your action and press the return key.

Creative Sparks claim the game will interest early adventurers of any age, but the lack of opportunity to do any real thinking will limit its attraction to the very young. More often than not the course of action I would take was not offered to me, which I found limited my progress.

Graphics are cartoon-like and realistic – Danger Mouse actually looks like his TV equivalent.

An interesting concept to teach the young adventurer to make decisions, but the game does not introduce the basic rules of an adventure such as look, examine and inventory.

Title: Danger Mouse In The Black Forest Chateau
Programmers: Brian Belson, Edgar Belka, Kevin Buckner
Company: Creative Sparks, Thomson House, 296 Farnborough Road, Farnborough, Hants. Tel: 0252 543333
Hardware: 64, cassette recorder, joystick
Type of game: Graphics Adventure
Description: Track down the fiendish pi-beam operator
Fast loader: None
Graphics: ***
Sound: N/A
Playability: **
CCI Rating: **
Price: £7.95

Cult of the programmer

The faces behind the games

In our continuing series, Sue Pearce talks to programmers about their computing careers.

Andy Walker — Taskset

Andy Walker quit the Civil Service in order to start writing computer games.

"I became interested in computers quite a long time ago", comments Andy. "When micros first became available I was working for the Government and various models would pass across my desk, but I could never lay my hands on one".

Knowing that he wanted to write games, Andy went straight into Binary and Machine Code. He says: "I don't know any Basic at all. For games writing that's an advantage, but not for programming in general. Machine Code is also great when you want to control anything and in my book that also means controlling the video and SID chip".

Now heading up software house, Taskset, Andy has a team of in-house programmers constantly working on new ideas.

"Everything we do is written by a team", says Andy. "Everybody here is good at programming, but obviously some poeple are better at certain things. For example we employ a graphics artist to produce interesting sprites and background using his own utilities and it would be daft to ask him to write a whole game".

Nobody at Taskset, says Andy, has ever worked a 9-5 day. "In the last month of Pipeline", he comments, "We had two or three people working 12 hours a day, sometimes 18. That includes Saturdays and Sundays.

"If a job needs doing", Andy continues, "We'll get it done". Whatever the time of day, it would be unusual to find the Taskset offices empty. If somebody thinks up an idea, more often than not they will make their way to the office to try it out while it's fresh in their mind.

"We invest about six to eight man months in each game", says Andy. "An awful lot of time is spent on the rules of the game — what happens if this or that is done.

"Probably the best device we have here is not a machine", he continues, "But a white board. All ideas are written up on there and talked about. We only like to write original games. A lot of stuff is written and then thrown away".

All programming problems are worked out on paper rather than on screen. "It's necessary when you're programming 50/60K Machine Code", says Andy.

Andy French — DK'Tronics

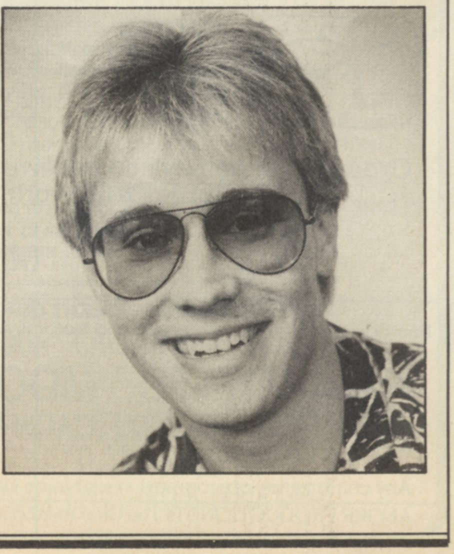
Author of dk'tronics Popeye game being released this month, Andy French, started his career in programming on data processing. "I got bored with that", says Andy. This was four and a half years ago when the games market seemed to be the 'in thing'. "I was in at the start of video games, which seemed to promise a future", he continues.

Andy gets his ideas for games from everyday occurences and as an expamle he quotes things going wrong around the home and people coming round to fix them. With Popeye, however, Andy had a fixed character to work with.

He comments: "The problem with working on Popeye is that people tend to be more critical as they know what the character should look like".

Andy has found the Popeye game to be very memory consuming. Written on the 64, the game has taken longer to write than previous games. "People now want better games", says Andy. "This means that extra work has to be put into a game".

A self-taught programmer, Andy believes that easiest way to learn programming is to teach yourself. Tending to plan his programs on bits of paper rather than directly onto the screen, Andy says: "It tends to be easier to work on paper. There are some parts of a game that you can do straight away using routines you have worked out in previous programs.



"It is also very useful to have full documentation of the program you are working on".

Work hours vary accordng to whatever stage the program is in. Andy explains: "It's getting towards 24 hours a day, three days in a row and then collapsing for a couple of days! Normally I work flat out for two or three weeks to get the basis of the game down and then get onto the hard slog of actually programming it into the computer, which I like to do from 9 to 5".

Mark Cale — System 3

Team spirit is in evidence at software house, System 3. The team consists of Mark Cale, Emerson Best and Byron Coke — all self-taught programmers who work together on each game.

The three knew each other from their schooldays. Mark Cale says that it took around one and a half years from learning what a keyboard does to completing the first game.

A games fanatic himself, Mark used to spend a lot of time in the arcades before computer consoles came out. "I prefer arcade games", says Mark. "Especially the shoot 'em up games. Programming adventures take a long time to write and can be tedious".

System 3 utilize a story board for each game. Once the idea for a game is conceived is developed and further developed.

"You can keep perfecting a game until the cows come home", says Mark.

"It certainly does save time writing it all down on paper first and it helps to eliminate any bugs. If you are working on the screen you have to keep getting listings.

"Once you start doing the graphics, you improve the screen and redevelop it", he continues.

The time taken to write a game depends on the complexity of the program. Mark comments: "A game really shouldn't take much more than three months to write. However games are increasingly becoming more complex which takes up more time.

As you can imagine, after a few months of programming a game the programmers are sick of the sight of it.

Mark says: "The thing with a game that you have written yourself is that you know what's round the corner, There's no element of suspense which you usually get when you are battling to get onto the the next screen.

"We usually start playing our games again after a few months", he continues. "Within hindsight you can always see ways in which the game could have been improved. The most successful aspect about a game is not to make it too hard, but hard enough to make it challenging".

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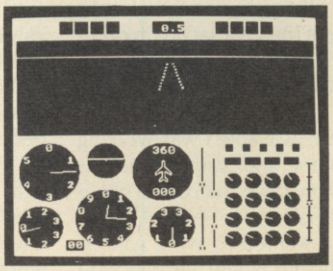

picture shows BBC/B version (2 colour)

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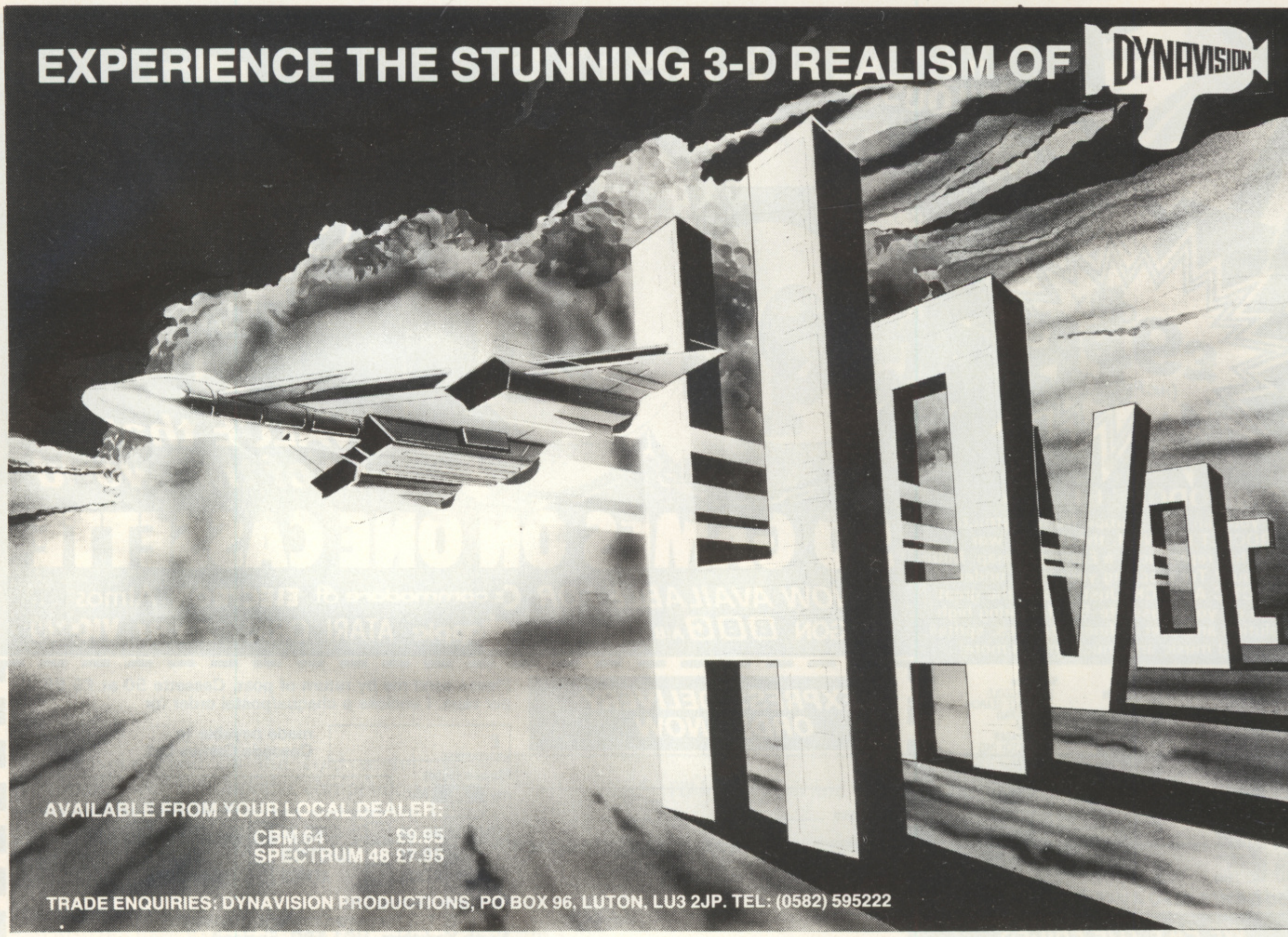
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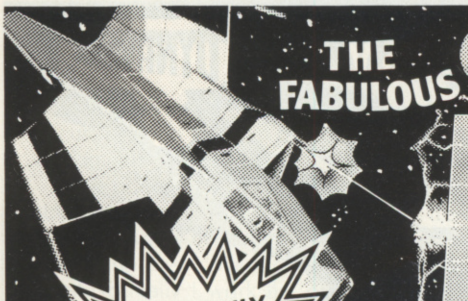

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"Adventures which have a fast response time, are spectacular in the amount of detail and number of locations, and are available to cassette owners . . Simply smashing!" *– Soft, Sept 83*

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Seaside Special - win sun, sea and surf

Take your mind off the cold winter months with this month's competition sponsored by Taskset. Sun, sea and surf are the flavour of Taskset's new game Seaside Special.

The game

You play the hero Radium Rodney down at the beach. The tide comes in bringing with it radioactive seaweed. Your task is to collect 10 pieces of seaweed. It's not as easy as it sounds with the danger of drowning – not to mention crabs, jellyfish and clams, all out to stop you. And if Rodney stays on the beach too long, he too will become radioactive and die!

Once you've collected 10 pieces of seaweed you move onto the next stage and find yourself outside 10 Downing Street. Here you have to lob your seaweed at polytikians (politicians – geddit?). However the evil polytikians retaliate by lobbing back chairs, pillows – whatever they can lay their hands on.

From there it's back to the beach to collect more ammo.

The competition

On this page we have listed 10 coastal places which are all famous for something, but can you tell us what?

Well, if you think that's easy, complete the last line in your tie-breaker limerick. Make your answers as witty as you like. but keep it clean!

The prizes

Our overall winner will receive a holiday voucher from Taskset to the value of £100 which can be used at a well-known travel agent towards the holiday of your choice. Plus a range of Taskset games (including Seaside Special of course), T-shirts, posters and other goodies.

Ten runners-up will also receive a selection of Taskset games, Tshirts and goodies.

Fill in the form and complete the limerick

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Cowes	
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Dover	
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The Wash	

Closing date for competition is 31 November. The Editor's decision if final.

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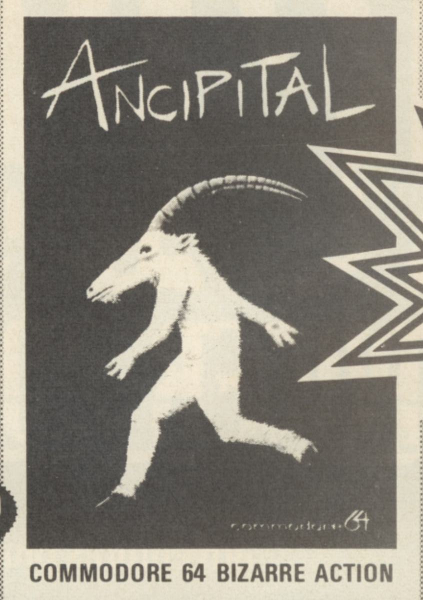
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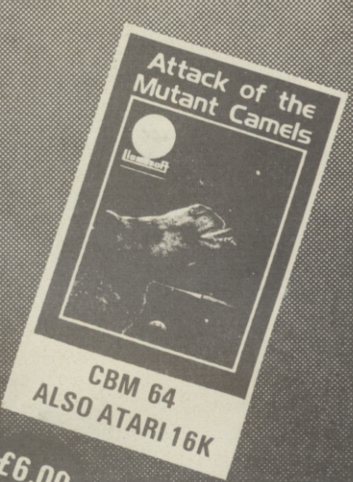
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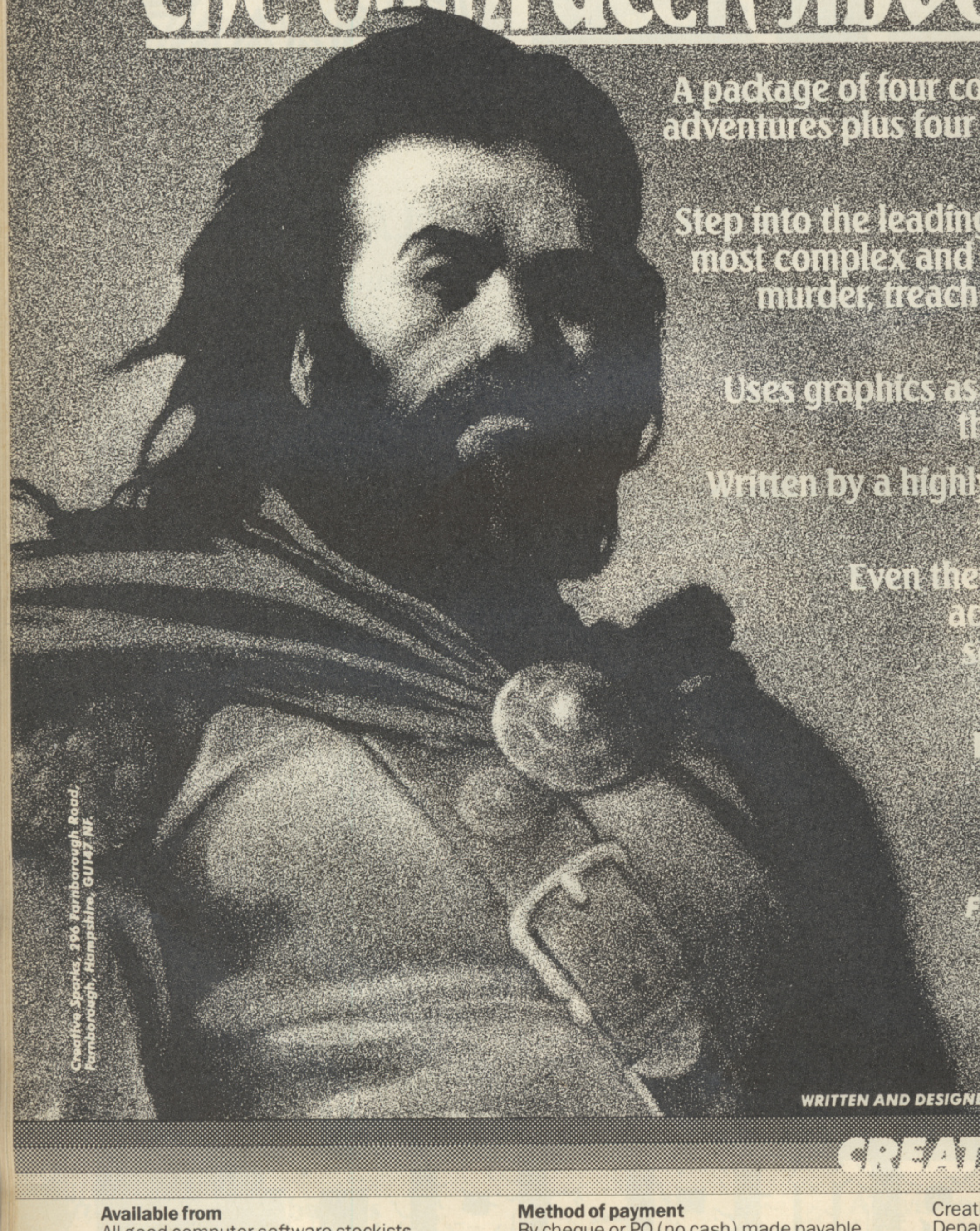

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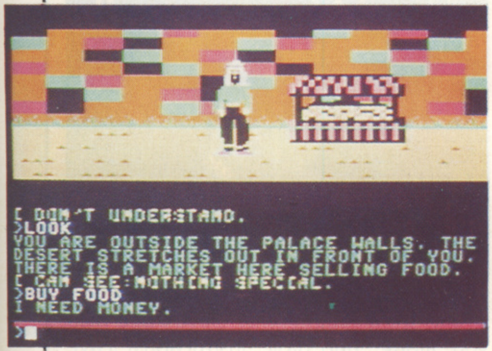
Spirit of Adventure

Our opinions on a selection of new arcade and adventure games, including Commodore's new Spirit of the Stone tale set in the smuggling past of the Isle of Wight.

ZIM SALA BIM

Desert thieves, a beggar, palace guards – the makings of Zim Sala Bim, a clever, challenging new logic game from Melbourne House.



```
I DON'T UNDERSTAND.
>LOOK
YOU ARE OUTSIDE THE PALACE WALLS. THE
DESERT STRETCHES OUT IN FRONT OF YOU.
THERE IS A MARKET HERE SELLING FOOD.
I CAN SEE:NOTHING SPECIAL.
>BUY FOOD
I NEED MONEY.
>
```

It will have you bleary-eyed at 3am as your little mind struggles to recover the treasure from the Sultan's bedroom and bring it back to your starving village. But first you must get into the palace, quite a feat in itself. And you must be careful not to become weak from hunger, because food is not easily had. Neither is murder a simple way out. Zim Sala Bim is great fun, though, and very addictive, since each move makes you think you are oh so close.

The game comes with detailed 3D scrolling graphics of each scene – desert, palace wall, market, palace interior – all in colourful detail. A catchy eastern tune cheers you for the next round. The player types in two-word instructions on the keyboard and the program responds with clues, refusals or a clever phrase here and there.

Zim Sala Bim is suitable for the beginner as well as the more experienced who fancies brain teasers. Melbourne House says the game, available on cassette, takes several days to complete and I would guess that allows time to rest and refresh the mind, hopefully coming up with new ideas. The program uses Pavloda software to speed up the loading process, which takes less than three minutes. The conditions of the game vary from try to try, so boredom won't come quickly.

Title: Zim Sala Bim
Programmer: Kyle Hodgetts
Company: Melbourne House Software Publishers, Castle Yard House, Castle Yard, Richmond, Surrey TW10 6TF. Tel: 01-940 6064.
Hardware: 64, cassette recorder, joystick optional
Type of game: Graphic adventure
Description: Find your way into the palace and recover the stolen gold for your village
Fast loader: Pavloda
Graphics: ****
Sound: ****
Playability: ****
CCI Rating: *****
Price: £9.95 cassette

All games reviews appearing in this magazine are personal opinions and serve only as a guide to new games on the market. Our star ratings for graphics, sound, playability and the CCI rating are as follows:

*** = Poor**
**** = Average**
***** = Good**
****** = Very good**
******* = Excellent**

SPIRIT OF THE STONES

Over the downs and through the copse on the Isle of Wight, you the traveller are in search of the valuable Great Wight Eye (or you wouldn't be playing the game, would you?)

The forests, quarries, fields and bays of the island are just the surface in Spirit of the Stones, the graphic extravaganza in more ways than one. Featuring a colourful, imaginative book to go along with the computer game, Spirit of the Stones is Commodore's latest bid at a share of the games software market. (see story page 29 for more details.)

We're happy to report the effort lives up to the packaging. Inside is a detailed scrolling map of the Isle of Wight to start you on your way through the game. An array of bridges, trees, rivers and buildings challenge you to cross, go under, go in and so forth

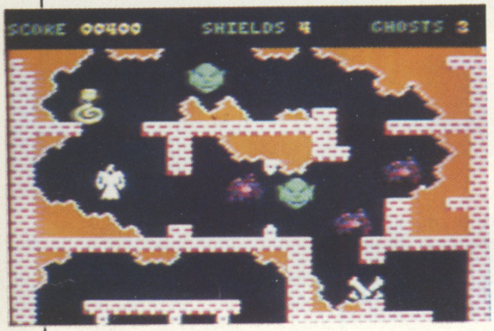
Once inside one of the mills, castles, forts, lighthouses or various other habitats, you're promptly skewered by arrows that shoot out from wall or projectiles plummeting from the ceilings – unless, of course, you manage to avoid them.

And on it goes. Most of the structures look quite a bit alike inside, but each has its little surprises waiting for you and 40 of the places house one of the precious diamond talismen you need to find to get the big prize. Overall, Spirit of the Stones, is an excellent offerng to the software goods.

Title: Spirit of the Stones

Programmers: Ian Gray and Lee Braine
Company: Commodore, 1 Hunters Lane, Weldon, Corby, N. Hants NN17 1QX. Tel: 0536 205252
Hardware: 64, cassette unit or disk drive, joystick
Type of Game: Graphic adventure
Description: Search Isle of Wight's landscape and abodes for 40 diamonds and the Great Wight Eye
Fast loader: Yes
Graphics: *****
Sound: ***
Playability: ****
CCI Rating: *****
Price: £14.99 cassette or disk

WHERE'S MY BONES?



Ghosties and ghoulies and things that go bump in the night ... but you'd better not bump anything here or you'll be forced to go right back where you started from.

Interceptor Micro's Where's My Bones is an addictive bit of arcade fun as you try to manoeuvre a dead monk, Brother Jeffrey, through the bowels of the earth in search of his bones, which have been scattered by the jealous nasty who killed him. You begin with nine monks each with nine shields and creep through the caverns without touching anything. Each time you retrieve a pile of bones, you get bonus points.

The vertical scrolling, cave walls and bone piles are very nice touches in this one and, though it takes a bit of skill with the joystick, Where's My Bones is just encouraging enough to lead you on. The game, which comes on cassette for the 64, becomes more difficult the farther along you get, so it still provides a challenge for the more experienced.

Title: Where's My Bones
Programmer: Lee (Valentino) Braine
Company: Interceptor Micros, Lindon House, The Green, Tadley, Hants. Tel: 07356 71145
Hardware: 64, cassette recorder, joystick
Type of game: Arcade
Description: Avoid cave walls and other obstacles while collecting the monk's bones
Fast loader: Ultra Load
Graphics: ***
Sound: **
Playability: ****
CCI Rating: ***
Price: £7 cassette, £9 disk

STOCKADE

Big, bad Jake has found the loot from Billy the Kid's bank raid in an old army fort and now he has to get out before he's killed by the indians. But what good will pieces of the fort's gate do him, for that is what he is looking for in Stockade.

Just one of many questions that pop up in this frustrating arcade game. For one thing, all instructions fit on one third of one side of the cassette inlay card with borders. Need I say more? Well, I will.

Available on cassette for the 64, the game goes very quickly and doesn't seem to be equipped with levels of experience, so the player has little choice. A sensitive joystick or quick fingers on the keyboard are a must in this one and it can be quite fun once you get the hang of it. In addition to collecting pieces of the gate, you can pick up fruit and blast indians with your shotgun for points. The only bits of sound are gun shots and a 10-note background tune that pops up occasionally and can get rather tiresome after a time.

Title: Stockade
Programmer: Huw Ford
Company: Wordlight Ltd, Caedu House, 35 Fenton Place, Porthcawl, Mid Glam CF36 3DW. Tel: 0656 714830
Hardware: 64, cassette recorder, joystick optional
Type of game: Arcade
Description: Collect pieces of gate and fruit and shoot indians before you're killed
Fast loader: none
Graphics: ***
Sound: *
Playability: ***
CCI Rating: ***
Price: £8.95 cassette

PIXIE PETE

You've killed Desmond the evil Dragon but he comes back to haunt you as Gorgo the Ghost so you've got to get him a second time and this time it won't be as easy. And watch it, you – Pixie Pete – only have three lives.

Pixie Pete by Merlin Software has levels of difficulty up to 15, but even level five doesn't give Pete much of a chance once the ghost comes after him. And at one point on level 10, the ghost appeared on top of Pete, giving no opportunity for escape whatsoever. I must say, I find the method of killing monsters, pumping air into them until they blow up, a bit offensive.

Graphics on Pixie Pete are colourful as the little man tries to dig his way to survival deep underground, but the design is the same throughout and looks a bit like a Pac Man maze game. Like Pac Man, the technique must be learned with practice.

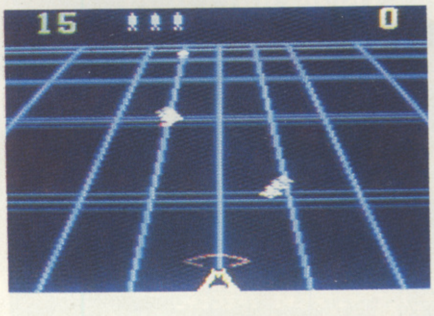
Make certain you have a good joystick so you can get to the monsters before they get to you and ignore the fact that the "carrots" in the instructions look suspiciously like strawberries.

Title: Pixie Pete
Programmer: Jason Perkins
Company: Merlin Software, Business and Technology Centre, Bessemer Drive, Stevenage, Herts SG1 2DX. Tel: 0438 316561
Hardware: 64, cassette recorder, joystick
Type of game: Arcade
Description: Eat all the carrots and destroy the monsters as fast as you can
Fast loader: none
Graphics: **
Sound: **
Playability: ***
CCI Rating: ***
Price: £6.95 (cassette), £8.95 (disk)

BEAMRIDER

The space age is upon us in Beamrider, an Activision game for the 64 using 3D graphics and sound slightly reminiscent of Space Invaders, one of the first successful arcade games.

As the Beamrider, your mission is to destroy enemy saucers in various sectors and eventually clear the restrictor shield surrounding the earth. Each sector is more difficult to conquer and once you become a pro, higher levels of play start you out at more difficult sectors.



Hints from programmer Dave Rolfe help you along, but basic instructions leave something to be desired. Trial and error seems to be the method of figuring out that the F1 button restarts the game and Run/Stop pressed along with restore gets you back to title page. For future reference, apparently all Activision games use this function. (Wouldn't it be nice to be told?)

Most avid computer game fans will be able to play this and most any joystick will do well to move you from one beam to another.

Sound effects include one that sounds eerily like a nuclear warning. All great fun. The only catch is the seven to eight minute loading time.

Title: Beamrider
Programmer: Dave Rolfe
Company: Activision UK Ltd, 15 Harley House, Marylebone Road, London NW1. Tel: 01-486 7588
Hardware: 64, cassette recorder, joystick
Type of game: Arcade
Description: Destroy enemy saucers in each sector by moving from one beam to another
Fast loader: none
Graphics: ****
Sound: ***
Playability: ****
CCI Rating: ****
Price: £9.99 cassette

EUREKA!

Leave yourself plenty of time for this one – about 15 months ... that's the amount of time Domark say it might take to crack this graphic adventure. But it may be worth your hours because a prize of £25,000 lies at the end of the rainbow. And even if you don't make it, everyone else may be in the same shoes in which case the prize will eventually be divided among all registered owners of Eureka!

Unfortunately, CCI doesn't have 15 months to spend on a game, we looked at one of the five parts "Roman Times". Relatively simple boxed graphics bely the messages underneath, which may require a Latin dictionary to decipher – quite sensible when you consider that the setting is ancient Rome. Luckily the only portions not in English are those when subjects such as lost men or palace guards speak to you – apparently some of the riddles, clues and puzzles that are the basis of Eureka!

Copies of the actual instructions that come with the game were not available at press time, so we can't tell you whether they are adequate. The game is not easily conquered in any case, but you might find it a healthy brainteaser.

The package of five adventure games pulls the player through five eras of history from the dinosaur age to the Carribean of the 20th century. A secret telephone number at the end of the adventure will yield the grand prize for the first person who calls it.

Title: Eureka!
Programmer: Andromeda Software

Company: Domark, 228 Munster Road, London SW6. Tel: 01-460 6000
Hardware: 64, cassette recorder or disk drive
Type of game: Graphics adventure
Description: Five adventure games of clues, riddles and puzzles leading to a secret telephone number
Fast loader: Novaload
Graphics: ***
Sound: ***
Playability: ***
CCI Rating: ***
Price: £14.95 (cassette) $16.95 (disk)

STAR EGGS

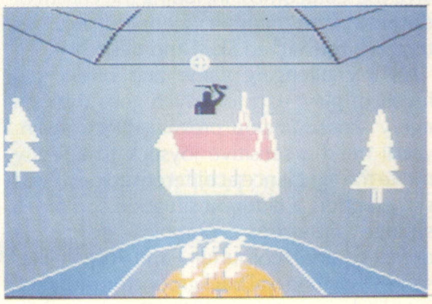
Whether you are a raw, hard or eggspert gamester, Star Eggs will keep your attention for some time as you flit about the hatchery killing alien creatures before they grow into adult monsters.

The game gives you two ways of killing the newborns – tapping the eggs while they hatch or shooting the newly hatched creatures. Once you've cleared the hatchery you must chase the escaped monsters in your space ship.

Including a high score table and eight different screens for the game itself, Star Eggs makes good use of graphics for escalators, a lift and hatching eggs and the player's tapping on the eggs is one of the sound features. Unfortunately, each time I tried to chase the escaped villains the game ended. Perhaps you can do better. Happy tapping!

Title: Star Eggs
Programmer: Andrew Pohl
Company: Mirrorsoft, Mirror Group Newspapers Ltd., Holborn Circus, London EC1P 1DQ. Tel: 01-822 3913
Hardware: 64, cassette recorder, joystick
Type of game: Arcade
Description: Kill alien creatures hatching from eggs in the hatchery
Fast loader: Speedy Loading
Graphics: ***
Sound: **
Playability: ***
CCI Rating: ***
Price: £6.95 cassette, £9.95 disk

TERRORIST



Broadcasting station is under fire and you are Red Leader, in charge of an anti-terrorist squad set to defend that location among many in a town under attack.

With helicopter gunship, police car and boat at your disposal, you must get to the scene quickly with only the memory of a map to aid you. The installations vulnerable to attack are marked on the left side of your screen. Take care not to run out of fuel!

Complex rank and point systems as well as varied towns and attack scenes give the Terrorist player a choice and high scorers can enter their initials on the panel. Battle sequences in 3D and challenging maps tingle your fingers as you strategically manoeuvre the joystick.

In cassette form, it's a fast-paced game that relies on memory and skill but also encourages the beginner, so it is more likely to grow with the player.

Title: Terrorist
Programmer: Andromeda Software
Company: Virgin Games Ltd, 2-4 Vernon Yard, London W11. Tel: 01-727 8070
Hardware: 64, cassette recorder, joystick
Type of game: Arcade/Graphics adventure
Description: Engage terrorists in battle before they destroy town installations
Fast loader: Flashload
Graphics: ****
Sound: ***
Playability: ****
CCI Rating: ****
Price: £7.95 cassette

CATASTROPHES

If making the headlines of The Daily Mirror is your dream, Catastrophes at least makes you think you did.

Whether the coverage is favourable or not, however, depends on your talents as a construction worker. The object of Catastrophes is to construct a six-story building by placing bricks with a helicopter crane, moving them from barges to the precise position on the building. If you miss, the block falls with a mighty splash into the water surrounding the building (what???) and if you don't build in the right places at the right time, one of several possible catastrophes will strike down parts of it.

Graphics are best when the elements – wind, rain, lightning, earthquake – wreak destruction. Sound effects include white noise for a hurricane and music that alternates with helicopter blades buzzing.

Equipped with a demonstration game, Catastrophes also requires a rather sensitive joystick to position the bricks. You may have to take several tries at the instructions which flash quickly on and off the screen. Otherwise, an entertaining game for most age levels and the headline and story at game's end reflect your success. Let us only hope the writing in The Daily Mirror is not as bad as that in Catastrophes.

Title: Catastrophes
Programmer: L. Balint
Company: Mirrorsoft, Mirror Group Newspapers Ltd, Holborn Circus, London EC1P 1DQ. Tel: 01-822 3913
Hardware: 64, cassette recorder or disk drive, joystick
Type of game: Arcade
Description: Build six-story structure while trying to lessen damage from various natural catastrophes
Fast loader: Speedy Loading
Graphics:
Sound: **
Playability: ***
CCI Rating: ***
Price: £6.95 cassette, £9.95 disk

ANCIPITAL

"The Ancipital life-form evolved on a little-known planet out on the edge of the Galaxy. In the flesh it resembles a cross between a humanoid and a goat, walking erect but possessing long, curving horns and a thick, shaggy coat of white hair."

So begins the tale (and the instructions) for Ancipital by story master Jeff Minter, published by Llamasoft. The same sense of imagination that wrote that, goes throughout the game with the Ancipital doing energetic jump-turns from one wall to another as it shoots targets that then fall onto a wall, weaken it and eventually open it. One clumsy move and it walks ungallantly into a wall (fatal) or draws snide comments from the programmer, ever present in text at the top left of the screen.

The player is allowed to practice the agile gymnastics, performed with a joystick of course, on an easy demo screen. The flashing graphics are included in the entertaining introduction and Novaload makes loading the program from the cassette a quick task.

Warning, though ... one might need a bit of background with Jeff Minter games to figure out how his mind works. A generous supply of time and patience will also be of value, but Ancipital is well worth the effort.

Title: Ancipital
Programmer: Jeff Minter
Company: Llamasoft, 49 Mount Pleasant, Tadley, Hants RG26 6BN. Tel: 07356 4478
Hardware: 64, cassette recorder, joystick
Type of game: Arcade
Description: Damage walls in each of 100 rooms within the maze, getting as many points as possible
Fast loader: Novaload
Graphics: ***
Sound: **
Playability: ****
CCI Rating: ***
Price: £7.50 cassette, £9.50 disk

HAVOC

Avoid the homing device and a few hundred other destructive objects and you'll see some of the best 3D effects in arcade computer games.

In the style of Zaxxon, Havoc's graphics are not necessarily complex but give a good feeling of depth and height as you try to fly your World Peace Force interceptor through hostile territory. You're often blown off course by explosions all around you and getting through the first bit is hampered by a homing device that appears almost straight away.

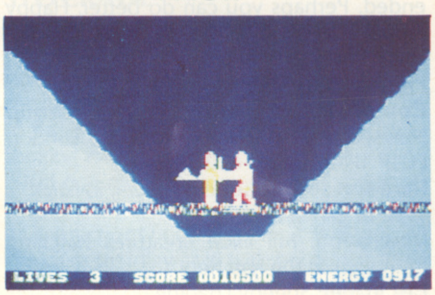
Avoiding the enemy missiles and manoeuvring over, under and through obstacles such as towering walls and strategically placed columns will require a very sensitive joystick, so be certain you're well equipped or you could become frustrated with the game in the early stages.

If you can master Havoc, though, there are some very good screens ahead of you and be prepared for a (hopefully) lengthy mission.

With the game comes a £5 voucher for use on certain Dynavision products, including a joystick and a light pen. The Burner Fast Loader cuts loading time to three minutes, eight seconds.

Title: Havoc
Programmer: A. Osborne
Company: Dynavision Productions, PO Box 96, Luton LU3 2JP. Tel: 0582 595222
Hardware: 64, cassette recorder, joystick
Type of game: Arcade
Description: Fly the WPF interceptor through hostile areas avoiding enemy missiles and obstacles such as columns and high walls
Fast loader: Burner
Graphics: ****
Sound: ***
Playability: ***
CCI Rating: ***
Price: £9.95 cassette

STORM WARRIOR

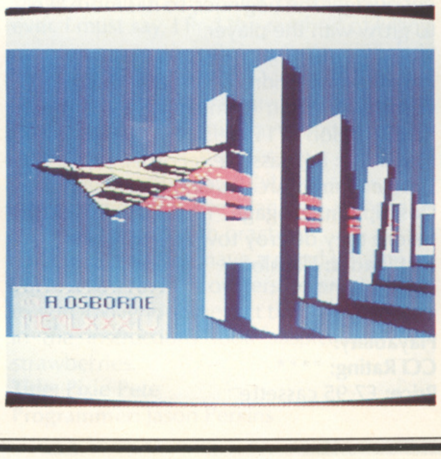


The Storm Warrior is put through his paces in twelve scenes of this new K-Tel game.

With only the help of his light lance, the Storm Warrior must pass the first screen by deflecting an energy sphere, the second by striking down the Barbarian with a stab under the arm and so on through the first four screens. Next, Storm Warrior must survive the Catacombs, including the chasm of doom and the chamber of jeopardy in order to reach the Sacred Skull and destroy it.

It's a challenging game and offers five levels of play, each of which goes through every screen (if you prevail). Once again, you'll need a sensitive joystick to adeptly move the light lance at different angles. Each screen offers a different situation and more strange creatures. Graphics design is detailed and colourful, and organ-like, somewhat funereal background music takes good advantage of the 64's sound capabilities.

Title: Storm Warrior
Programmer: Terence Watts
Company: K-Tel International UK Ltd, 620 Western Avenue, London W3 0TU. Tel: 01-992 8055
Hardware: 64, cassette recorder or disk drive, joystick
Type of game: Arcade
Description: Find and destroy the Sacred Skull by going through light barriers, oceans and caverns
Fast loader: None
Graphics: ****
Sound: ***
Playability: ***
CCI Rating: ***
Price: £7.95 cassette, £8.95 disk



HIGH NOON

You gotta be quick awn the draw to git dem gangsteus.

As the sheriff, you must shoot the outlaws who come through your small western town and make certain they don't get away with the gold or the saloon girls – a familiar theme to any film buff. Once you saunter out of your office door, the action starts with the gangsters sneaking into town on foot or horseback, depending on your level of play.

You can make the outlaws pause by hiding in the bank or the neighbouring Saucy Sue's Saloon, complete with swinging doors. More nice graphics touches come with the undertaker, suspiciously named Riga Mortis, who comes out of his building to gather and drag off any dead bodies lying around. A fun game all around with some clever amusements for young or old, though it may not present the greatest challenge of skill to the very experienced.

Title: High Noon
Programmers: Steve Wiggins and Andrew Spencer
Company: Ocean Software, Ocean House, 6 Central Street, Manchester M2 5NS. Tel: 061-832 6633
Hardware: 64, cassette recorder, joystick
Type of game: Arcade
Description: Shoot outlaws to prevent them taking gold and saloon girls
Fast loader: Novaload
Graphics: ****
Sound: ***
Playability: ***
CCI Rating: ****
Price: £7.90

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As games reviews are to a large extent dependent on personal preference, you may sometimes disagree with our reviewers. Next month we are giving you an opportunity to voice your opinion.

Send us a review of your favourite computer game of 1984. It could be an adventure or arcade, for the 64 or the VIC. We will publish the best reviews in our December issue.

Your review should be approximately 150 words written in CCI style and send it to:

Readers' reviews,
Commodore Computing International,
Finsbury Business Centre,
40 Bowling Green Lane,
London EC1R 0NE.

1985 will see the introduction of a CCI review panel made up of readers. The panel will be selected from the writers of the best reviews submitted for our Favourite Game of 1984 readers' pages.

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Well, in addition to having your reviews published in CCI regularly, you can build up a library of free software from the games we send to you for review purposes.

Put pen to paper NOW if you want your review to reach us in time for inclusion in the next issue!

Beam me up Scotty!

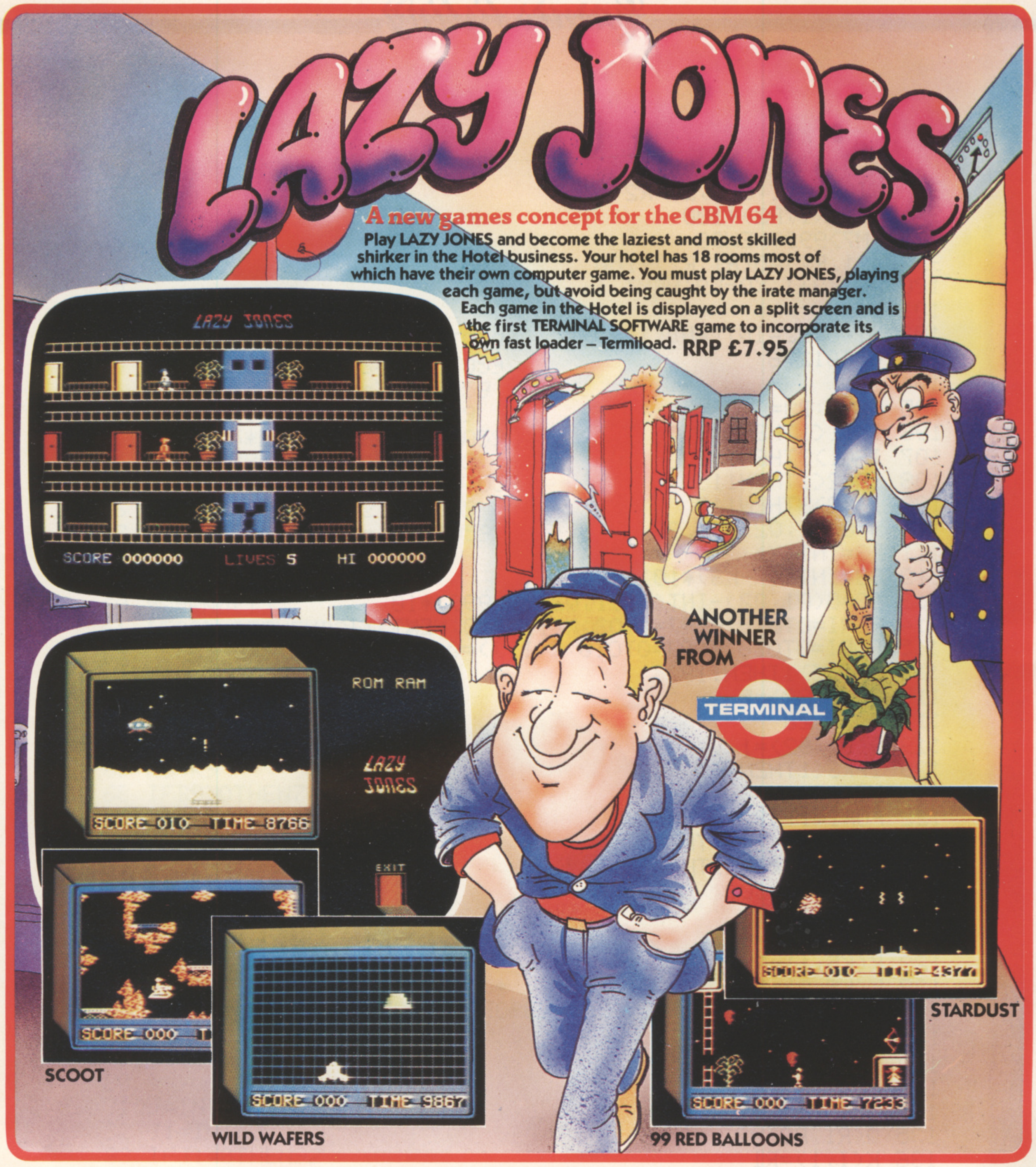
A taster to Richard Franklin's 64 game inspired by the crew of the Starship Enterprise. Due to it's length, more follows next month ... it'll be worth the wait!

```
0 POKE53281,7:POKE53280,6:PRINT"▓▓";
1 PRINT"                    ▓STAR TREK▓"
2 OPEN2,0:I9=RND(0)
3 PRINT"▓▓    BE CAREFUL AND HAVE A GOOD TIME"
4 DIM Q$(10),F$(12)
5 DIM G(8,8),Q(10,10),D(8),K(10,3),N(3),C(9,2)
6 DIM C0(8,8)
7 GOSUB1148
8 PRINT"▓▓▓▓▓▓▓▓TO PLAY SHORT VERSION,";
9 PRINT"     TYPE 1 ---"
10 PRINT"▓TO PLAY REGULAR VERSION,   TYPE 2 ---"
11 PRINT"▓TO PLAY CHALLENGE VERSION, TYPE 3 ---"
12 INPUT#2,V$:PRINT:V=VAL(V$)
13 I=V*100
14 IFV>0ANDV<4ANDV=INT(V)THEN16
15 GOTO8
16 E0=5000:PRINT
17 E=E0:P0=13:P=13:S9=200:N1=1:R8=1:B7=0
18 DEF FNO(F)=SQR((K(F,1)-S1)↑2+(K(F,2)-S2)↑2)
19 GOSUB732
20 F=1:T0=INT(RND(1)*50+20)*100:T=T0
21 T9=25+INT(RND(1)*11)
22 FORI=1TO7:D(I)=0:NEXT
23 S1=INT(RND(1)*10+1)
24 S2=INT(RND(1)*10+1)
25 :
26 B9=0:E4=0:W3=0:C5=0
27 Z$="DOWN":A9=3000:K9=0:L8=8
28 IFV<>1THEN31
29 PRINT"▓▓     YOUR SHORTENED GALAXY IS 6 BY 6"
30 L8=6:T9=14+INT(RND(1)*11)
31 FORI=1TOL8
32 FORJ=1TOL8
33 IFV=2THEN47
34 IFV=3THEN46
35 R=RND(1)*36
36 IFR<1.25THENK3=5:GOTO44
37 IFR<2.5THENK3=4:GOTO44
38 IFR<3.75THENK3=3:GOTO44
39 IFR<5.0THENK3=4:GOTO44
40 IFR<6.25THENK3=0:GOTO44
41 IFR<7.5THENK3=2:GOTO44
42 IFR<9.0THENK3=1:GOTO44
```

```
43 K3=0
44 K9=K9+K3
45 GOTO62
46 R8=1.85
47 :
48 R=RND(1)*64
49 IFR<.10*R8THENK3=9:GOTO59
50 IFR<.25*R8THENK3=8:GOTO59
51 IFR<.5*R8THENK3=7:GOTO59
52 IFR<1*R8THENK3=6:GOTO59
53 IFR<1.5*R8THENK3=5:GOTO59
54 IFR<3*R8THENK3=4:GOTO59
55 IFR<6.28*R8THENK3=3:GOTO59
56 IFR<9*R8THENK3=2:GOTO59
57 IFR<14.28THENK3=1:GOTO59
58 K3=0
59 K9=K9+K3
60 B3=RND(1)
61 IFB3>.97THENB3=1:C0(I,J)=.11:GOTO63
62 B3=0:C0(I,J)=.01
63 B9=B9+B3
64 S3=INT(RND(1)*8+1)
65 G(I,J)=K3*100+B3*10+S3
66 NEXT J,I
67 K0=K9
68 IFB9>0THEN74
69 I=INT(RND(1)*L8+1)
70 J=INT(RND(1)*L8+1)
71 G(I,J)=G(I,J)+10
72 C0(I,J)=.11
73 B9=1
74 P2=1
75 Q1=INT(RND(1)*L8+1)
76 Q2=INT(RND(1)*L8+1)
77 PRINT"▚▜PLEASE TYPE A SECRET PASSWORD :▜";
78 INPUT#2,X$:PRINT
79 N1=0:N9=0:N7=0:A7=0
80 :
81 J=INT(4.5*RND(1)*R8+1)
82 J1=INT(J/2)
83 IFJ1=0THEN92
84 FORI=1TOJ1
85 R1=INT(RND(1)*L8+1)
86 R2=INT(RND(1)*L8+1)
87 M7=G(R1,R2)+100
88 IFM7>999THEN85
89 C(I,1)=R1:C(I,2)=R2
90 G(R1,R2)=G(R1,R2)+100
91 K9=K9+1:K0=K9:NEXT I
92 FORI=J1+1TOJ
93 R1=INT(RND(1)*L8+1)
94 R2=INT(RND(1)*L8+1)
95 IFG(R1,R2)<100THEN93
```

```
96 C(I,1)=R1:C(I,2)=R2
97 M7=G(R1,R2)+100
98 IFM7>999THEN93
99 G(R1,R2)=G(R1,R2)+100
100 K9=K9+1:K0=K9:NEXT I
101 :
102 H1=0:H2=INT(RND(1)*5)
103 GOTO1276
104 :
105 K3=0:B3=0:S3=0
106 IFQ1<1THEN115
107 IFQ1>8THEN115
108 IFQ2<1THEN115
109 IFQ2>8THEN115
110 X=G(Q1,Q2)/99.99
111 K3=INT(X)
112 B3=INT((X-K3)*10)
113 S3=G(Q1,Q2)-INT(G(Q1,Q2)/9.999)*10
114 FORI=0TO10:FORJ=0TO3:K(I,J)=0:NEXTJ,I
115 FORI=0TO10:FORJ=0TO10:Q(I,J)=0:NEXTJ,I
116 IFN1<>1THEN119
117 Q(S1,S2)=5
118 GOTO120
119 Q(S1,S2)=1
120 IFK3<1THEN140
121 K5=K3
122 FORI=1TO9
123 IFQ1<>C(I,1)THEN131
124 IFQ2<>C(I,2)THEN131
125 K(K5,3)=600
126 GOSUB1271
127 Q(R1,R2)=6
128 K(K5,1)=R1
129 K(K5,2)=R2
130 K5=K5-1
131 NEXT
132 IFK5<=0THEN140
133 FORI=1TOK5
134 GOSUB1271
135 Q(R1,R2)=2
136 K(I,1)=R1
137 K(I,2)=R2
138 K(I,3)=S9
139 NEXT I
140 IFB3<1THEN147
141 FORI=1TOB3
142 GOSUB1271
143 Q(R1,R2)=3
144 B1=R1
145 B2=R2
146 NEXT I
147 IFS3<1THEN152
148 FORI=1TOS3
```

(continued on page 69)


LAZY JONES
LAZY JONES
SCORE 000000 LIVES 5 HI 000000
ROM RAM
LAZY JONES
SCORE 010 TIME 8766
EXIT
SCORE 000
SCORE 000 TIME 9867
SCORE 010 TIME 4377
SCORE 000 TIME 7233
ANOTHER WINNER FROM
TERMINAL
SCOOT
WILD WAFERS
99 RED BALLOONS
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- Twang

TERMINAL

Terminal Software, Derby House, Derby Street, Bury BL9 0NW, England. Tel. 061-761-4321

```
210 DATA 245,173,30,194,141,236,2,162,0,189,32,194,1598
220 DATA 157,239,2,232,236,31,194,208,244,169,92,157,1961
230 DATA 239,2,232,142,237,2,160,0,177,43,153,253,1640
240 DATA 2,169,0,145,43,200,192,3,208,242,169,167,1540
250 DATA 141,2,3,169,2,141,3,3,173,30,194,170,1031
260 DATA 160,1,32,186,255,173,31,194,162,32,160,194,1580
270 DATA 32,189,255,169,167,133,251,169,2,133,252,169,1921
280 DATA 251,162,4,160,3,32,216,255,173,237,2,162,1657
290 DATA 239,160,2,32,189,255,169,43,166,45,164,46,1510
300 DATA 32,216,255,169,131,141,2,3,169,164,141,3,1426
310 DATA 3,96,147,17,32,69,78,84,69,82,32,78,787
320 DATA 65,77,69,32,40,77,65,88,32,49,50,32,676
330 DATA 67,72,65,82,83,41,58,18,146,19,17,17,685
340 DATA 17,17,17,32,83,69,76,69,67,84,32,58,621
350 DATA 32,18,84,146,65,80,69,32,79,82,32,18,737
360 DATA 68,146,73,83,75,19,17,17,17,17,17,32,581
370 DATA 32,32,32,32,32,32,32,32,32,32,32,32,384
380 DATA 32,32,42,42,32,68,73,83,75,32,42,42,595
390 DATA 19,17,17,17,17,17,32,32,32,32,32,32,296
400 DATA 32,32,32,32,32,32,32,32,32,42,42,32,404
410 DATA 84,65,80,69,32,42,42,19,17,17,17,17,501
420 DATA 17,17,17,17,32,32,32,32,32,32,32,42,334
430 DATA 42,42,32,32,32,80,82,69,80,65,82,69,707
440 DATA 32,84,79,32,83,65,86,69,32,32,42,42,678
450 DATA 42,32,32,32,32,32,32,32,17,17,72,73,445
460 DATA 84,32,65,78,89,32,75,69,89,32,84,79,808
470 DATA 32,67,79,78,84,73,78,85,69,32,79,82,838
480 DATA 32,83,84,79,80,32,84,79,32,65,66,79,795
490 DATA 82,84,17,17,173,236,2,170,168,32,186,255,1422
500 DATA 173,237,2,162,239,160,2,32,189,255,169,0,1620
510 DATA 32,213,255,134,45,132,46,169,131,141,2,3,1303
520 DATA 169,164,141,3,3,169,82,141,119,2,169,117,1279
530 DATA 141,120,2,169,13,141,121,2,169,3,133,198,1212
540 DATA 160,0,185,253,2,145,43,200,192,3,208,246,1637
550 DATA 96,96

READY.
```

```
PAL (C)1979 BRAD TEMPLETON
22
110:    C1D8                    .OPT P4,00
                       ;AUTORUN & PROTECTOR
                       ;(C) B.DAVIS  SEPTEMBER 1984
                       ;WRITTEN ON 'PAL' ASSEMBLER
150:    C1D8          SETLFS    =     $FFBA
160:    C1D8          SETNAM    =     $FFBD
170:    C1D8          LOAD      =     $FFD5
180:    C1D8          SAVE      =     $FFD8
190:    C1D8          CHROUT    =     $FFD2
200:    C1D8          CHRIN     =     $FFCF
210:    C1D8          GETIN     =     $FFE4
220:    C1D8          MAINCODE  =     $C000
230:    C1D8          AUTOCODE  =     $C1D8
240:    C1D8          DEVICE    =     $C21E
250:    C1D8          NAMLEN    =     $C21F
```

```
260:    C1D8                  NAMBUF   =    $C220
270:    C1D8                  AUTODEV  =    $02EC
280:    C1D8                  AUTOLEN  =    $02ED
290:    C1D8                  AUTOBUF  =    $02EF
300:    C1D8                  CODESTR  =    $02FD
310:    C1D8                  KEYBUF   =    $0277
320:    C1D8                  BUFSZE   =    $00C6
330:    C1D8                           *=   AUTOCODE
340:    C1D8 AD EC 02 AUTO             LDA  AUTODEV
350:    C1DB AA                        TAX
360:    C1DC A8                        TAY
370:    C1DD 20 BA FF                  JSR  SETLFS
380:    C1E0 AD ED 02                  LDA  AUTOLEN
390:    C1E3 A2 EF                     LDX  #<AUTOBUF
400:    C1E5 A0 02                     LDY  #>AUTOBUF
410:    C1E7 20 BD FF                  JSR  SETNAM
420:    C1EA A9 00                     LDA  #$00
430:    C1EC 20 D5 FF                  JSR  LOAD
440:    C1EF 86 2D                     STX  $2D
450:    C1F1 84 2E                     STY  $2E
460:    C1F3 A9 83                     LDA  #$83
470:    C1F5 8D 02 03                  STA  $0302
480:    C1F8 A9 A4                     LDA  #$A4
490:    C1FA 8D 03 03                  STA  $0303
500:    C1FD A9 52                     LDA  #$52
510:    C1FF 8D 77 02                  STA  KEYBUF
520:    C202 A9 75                     LDA  #$75
530:    C204 8D 78 02                  STA  KEYBUF+1
540:    C207 A9 0D                     LDA  #$0D
550:    C209 8D 79 02                  STA  KEYBUF+2
560:    C20C A9 03                     LDA  #$03
570:    C20E 85 C6                     STA  BUFSZE
580:    C210 A0 00                     LDY  #$00
590:    C212 B9 FD 02 CODE             LDA  CODESTR,Y
600:    C215 91 2B                     STA  ($2B),Y
610:    C217 C8                        INY
620:    C218 C0 03                     CPY  #$03
630:    C21A D0 F6                     BNE  CODE
640:    C21C 60                        RTS
650:    C000                           *=   MAINCODE
660:    C000 A2 00                     LDX  #0
670:    C002 BD FE C0 LOOP1            LDA  MSGNAM,X
680:    C005 20 D2 FF                  JSR  CHROUT
690:    C008 E8                        INX
700:    C009 E0 1E                     CPX  #30
710:    C00B D0 F5                     BNE  LOOP1
720:    C00D A2 00                     LDX  #$00
730:    C00F 20 CF FF GETNAME          JSR  CHRIN
740:    C012 E0 0D                     CPX  #13
750:    C014 B0 08                     BCS  MAXLEN
760:    C016 9D 20 C2                  STA  NAMBUF,X
770:    C019 E8                        INX
780:    C01A C9 0D                     CMP  #13
```

```
 790:    C01C D0 F1              BNE  GETNAME
 800:    C01E CA        MAXLEN   DEX
 810:    C01F 8E 1F C2           STX  NAMLEN
 820:    C022 A2 00              LDX  #0
 830:    C024 BD 1C C1  LOOP2    LDA  MSGDEV,X
 840:    C027 20 D2 FF           JSR  CHROUT
 850:    C02A E8                 INX
 860:    C02B E0 23              CPX  #35
 870:    C02D D0 F5              BNE  LOOP2
 880:    C02F 20 E4 FF  GETDEV   JSR  GETIN
 890:    C032 C9 54              CMP  #"T"
 900:    C034 F0 19              BEQ  DEVTAPE
 910:    C036 C9 44              CMP  #"D"
 920:    C038 D0 F5              BNE  GETDEV
 930:    C03A A2 00              LDX  #0
 940:    C03C BD 3D C1  LOOP3    LDA  MSGDISK,X
 950:    C03F 20 D2 FF           JSR  CHROUT
 960:    C042 E8                 INX
 970:    C043 E0 20              CPX  #32
 980:    C045 D0 F5              BNE  LOOP3
 990:    C047 A9 08              LDA  ##$08
1000:    C049 8D 1E C2           STA  DEVICE
1010:    C04C 4C 61 C0           JMP  CONT
1020:    C04F A2 00     DEVTAPE  LDX  #0
1030:    C051 BD 5C C1  LOOP4    LDA  MSGTAPE,X
1040:    C054 20 D2 FF           JSR  CHROUT
1050:    C057 E8                 INX
1060:    C058 E0 20              CPX  #32
1070:    C05A D0 F5              BNE  LOOP4
1080:    C05C A9 01              LDA  #01
1090:    C05E 8D 1E C2           STA  DEVICE
1100:    C061 A2 00     CONT     LDX  #0
1110:    C063 BD 7B C1  LOOP5    LDA  MSGSAVE,X
1120:    C066 20 D2 FF           JSR  CHROUT
1130:    C069 E8                 INX
1140:    C06A E0 5D              CPX  #93
1150:    C06C D0 F5              BNE  LOOP5
1160:    C06E 20 E4 FF  LOOP7    JSR  GETIN
1170:    C071 F0 FB              BEQ  LOOP7
1180:    C073 C9 03              CMP  #"■"
1190:    C075 D0 01              BNE  PRESAVE
1200:    C077 60                 RTS
1210:    C078 A2 00     PRESAVE  LDX  #0
1220:    C07A BD D8 C1  LOOP8    LDA  AUTO,X
1230:    C07D 9D A7 02           STA  $02A7,X
1240:    C080 E8                 INX
1250:    C081 E0 45              CPX  ##$45
1260:    C083 D0 F5              BNE  LOOP8
1270:    C085 AD 1E C2           LDA  DEVICE
1280:    C088 8D EC 02           STA  AUTODEV
1290:    C08B A2 00              LDX  #0
1300:    C08D BD 20 C2  LOOP9    LDA  NAMBUF,X
1310:    C090 9D EF 02           STA  AUTOBUF,X
```

```
1320:   C093 E8                      INX
1330:   C094 EC 1F C2                CPX   NAMLEN
1340:   C097 D0 F4                   BNE   LOOP9
1350:   C099 A9 5C                   LDA   #"£"
1360:   C09B 9D EF 02                STA   AUTOBUF,X
1370:   C09E E8                      INX
1380:   C09F 8E ED 02                STX   AUTOLEN
1390:   C0A2 A0 00                   LDY   #$00
1400:   C0A4 B1 2B       LOOP10      LDA   ($2B),Y
1410:   C0A6 99 FD 02                STA   CODESTR,Y
1420:   C0A9 A9 00                   LDA   #0
1430:   C0AB 91 2B                   STA   ($2B),Y
1440:   C0AD C8                      INY
1450:   C0AE C0 03                   CPY   #$03
1460:   C0B0 D0 F2                   BNE   LOOP10
1470:   C0B2 A9 A7                   LDA   #$A7
1480:   C0B4 8D 02 03                STA   $0302
1490:   C0B7 A9 02                   LDA   #$02
1500:   C0B9 8D 03 03                STA   $0303
1510:   C0BC AD 1E C2 AUTOSAVE       LDA   DEVICE
1520:   C0BF AA                      TAX
1530:   C0C0 A0 01                   LDY   #$01
1540:   C0C2 20 BA FF                JSR   SETLFS
1550:   C0C5 AD 1F C2                LDA   NAMLEN
1560:   C0C8 A2 20                   LDX   #<NAMBUF
1570:   C0CA A0 C2                   LDY   #>NAMBUF
1580:   C0CC 20 BD FF                JSR   SETNAM
1590:   C0CF A9 A7                   LDA   #$A7
1600:   C0D1 85 FB                   STA   $FB
1610:   C0D3 A9 02                   LDA   #$02
1620:   C0D5 85 FC                   STA   $FC
1630:   C0D7 A9 FB                   LDA   #$FB
1640:   C0D9 A2 04                   LDX   #$04
1650:   C0DB A0 03                   LDY   #$03
1660:   C0DD 20 D8 FF                JSR   SAVE
1670:   C0E0 AD ED 02                LDA   AUTOLEN
1680:   C0E3 A2 EF                   LDX   #<AUTOBUF
1690:   C0E5 A0 02                   LDY   #>AUTOBUF
1700:   C0E7 20 BD FF                JSR   SETNAM
1710:   C0EA A9 2B                   LDA   #$2B
1720:   C0EC A6 2D                   LDX   $2D
1730:   C0EE A4 2E                   LDY   $2E
1740:   C0F0 20 D8 FF                JSR   SAVE
1750:   C0F3 A9 83                   LDA   #$83
1760:   C0F5 8D 02 03                STA   $0302
1770:   C0F8 A9 A4                   LDA   #$A4
1780:   C0FA 8D 03 03                STA   $0303
1790:   C0FD 60                      RTS
1800:   C0FE 93 11 20 MSGNAM         .ASC  "♥Q ENTER NAME (MAX 12 CHARS): 3"
1810:   C11C 92 13 11 MSGDEV         .ASC  "▬SQQQQQQ SELECT :  RT▬APE OR RD▬ISK"
1820:   C13D 13 11 11 MSGDISK        .ASC  "SQQQQQ                ** DISK **"
1830:   C15C 13 11 11 MSGTAPE        .ASC  "SQQQQQ                ** TAPE **"
1840:   C17B 13 11 11 MSGSAVE        .ASC  "SQQQQQQQQQ"
1850:   C184 20 20 20                .ASC  "       ***   PREPARE TO SAVE   *** "
1860:   C1AC 11 11 48                .ASC  "QQHIT ANY KEY TO CONTINUE OR STOP
"                                                        TO ABORTQQ
```

Five for your drive

Steve Mickelson has sent us the following five programs designed for the Commodore disk drive. Before running any of these programs be sure you have saved them on a safe disk.

NEW FILE NAME

This program changes a file name so that it looks the same in the catalog but will not load or scratch. To load or scratch the file, add a question mark at the end of the file name.
Example: LOAD"filename?",8.

```
5 REM NEW FILE NAME
10 POKE53281,0:POKE53280,0
20 INPUT"□≡◙◙ENTER FILE NAME: ";N$
30 OPEN1,8,15:PRINT#1,"R0:"+N$+CHR$(34)+
"=0:"+N$
40 INPUT#1,A,A$:PRINTA$:CLOSE1
```

NO DIRECTORY

This program changes the catalog so when you LOAD"$",8 then LIST, you will see nothing. It does this by replacing the header with three CHR$(20) (deletes), a CHR$(141) (shift-return), two CHR$(145) (cursor-ups) and then three nulls indicating the end-of-file marker to the LIST command. Files can still be Loaded and Saved and Scratched as normal.

```
5 REM NO DIRECTORY
10 POKE53281,0:POKE53280,0:PRINT"□≡◙◙◙INS
ERT DISK, PRESS RETURN"
20 GETA$:IFA$<>CHR$(13)THEN20
30 OPEN1,8,15,"I0":OPEN5,8,5,"#"
40 PRINT#1,"U1 5 0 18 0"
50 FORX=144TO168:READB
60 PRINT#1,"B-P:5 "X:PRINT#5,CHR$(B);:NE
XT
70 PRINT#1,"U2 5 0 18 0":INPUT#1,A,A$:PR
INTA$:PRINT#1,"I0":CLOSE1:CLOSE5
80 DATA20,20,20,141,145,145,0,0,0,0,255,
20,255,20
90 DATA20,20,20,20,20,20,20,20,20,20,20
```

NEW DISK NAME

This program lets you input up to a 16 character name then changes the header of the catalog. So when you LIST the catalog, the screen clears, the new name is printed in reverse at the top of the screen and all the files are listed below. This is also a good antidote to fix a disk on which you ran program number two, NO DIRECTORY.

```
5 REM NEW DISK NAME
10 POKE53281,0:POKE53280,0
20 INPUT"□≡◙◙ENTER DISK NAME ";N$
30 D$=CHR$(20)+CHR$(20):N=LEN(N$):IFN<1O
RN>16THEN20
40 IFN>13THENN$=LEFT$(N$,13)+D$+D$+MID$(
N$,14,N):N=LEN(N$)
50 OPEN1,8,15,"I0":OPEN5,8,5,"#"
60 PRINT#1,"U1 5 0 18 0"
70 FORX=144TO146:READB:GOSUB120:NEXT
80 FORI=1TON:B$=MID$(N$,I,1):B=ASC(B$):G
OSUB120:X=X+1:NEXT
90 IFX<167THENB=32:FORI=1TO20-N:GOSUB120
:X=X+1:NEXT
100 IFN<14THENFORX=162TO163:B=20:GOSUB12
0:NEXT
110 PRINT#1,"U2 5 0 18 0":INPUT#1,A,A$:P
RINTA$:PRINT#1,"I0":CLOSE1:CLOSE5:END
120 PRINT#1,"B-P:5 "X:PRINT#5,CHR$(B);:R
ETURN
130 DATA141,147,18
```

ENDLESS

This will change the catalog so it will loop around endlessly. This is done by changing the link pointers at the end of the catalog to point to the beginning. Thus when you LOAD"$",8 the disk drive will continue to spin until you hit the RUN/STOP key. If you then try to LIST you will see only garbage. The effects of this program are not reversable unless you reformat the disk, and you will now not be able to SAVE programs on this disk.

If you have loaded the DOS WEDGE program on the Test/Demo disk, using the @$ command will show you the catalog looping around.

```
5 REM ENDLESS
10 POKE53281,0:POKE53280,0:PRINT"□■■■INS
ERT DISK, PRESS RETURN"
20 GETA$:IFA$<>CHR$(13)THEN20
30 OPEN1,8,15,"I0:":OPEN5,8,5,"#":T=18:S
=1:Q$=CHR$(0)
40 PRINT#1,"U1 5 0 "T;S
50 FORI=0TO1:PRINT#1,"M-R"CHR$(I)CHR$(5)
:GET#1,B$:B$=B$+Q$:B(I)=ASC(B$):NEXT
60 IFB(0)=18THENS=B(1):GOTO40
70 PRINT#1,"B-P:5 0":PRINT#5,CHR$(T);CHR
$(1);
80 PRINT#1,"U2 5 0 "T;S:INPUT#1,A,A$:PRI
NTA$:CLOSE1:CLOSE5
```

PROTECT

This changes the DOS id number on a disk. On a 1541 formatted disk it is normally 65. By changing this to any other number, the DOS will not allow any writing to the disk, including SAVE"filename", or "SO:filename" (scratch), or "NO:diskname" (new), although any file can still be read off the disk.

The only way to fix this is to re-format the entire disk, "NO:diskname, id". By doing this you will loose all data on the disk, so be sure you have backed-up any files you need.

```
5 REM PROTECT
10 POKE53281,0:POKE53280,0:PRINT"□■■■INS
ERT DISK, PRESS RETURN"
20 GETA$:IFA$<>CHR$(13)THEN20
30 OPEN1,8,15,"I0":OPEN5,8,5,"#"
40 PRINT#1,"U1 5 0 18 0"
50 PRINT#1,"B-P:5 2":PRINT#5,CHR$(70);
60 PRINT#1,"U2 5 0 18 0":INPUT#1,A,A$:PR
INTA$:PRINT#1,"I0":CLOSE1:CLOSE5
```

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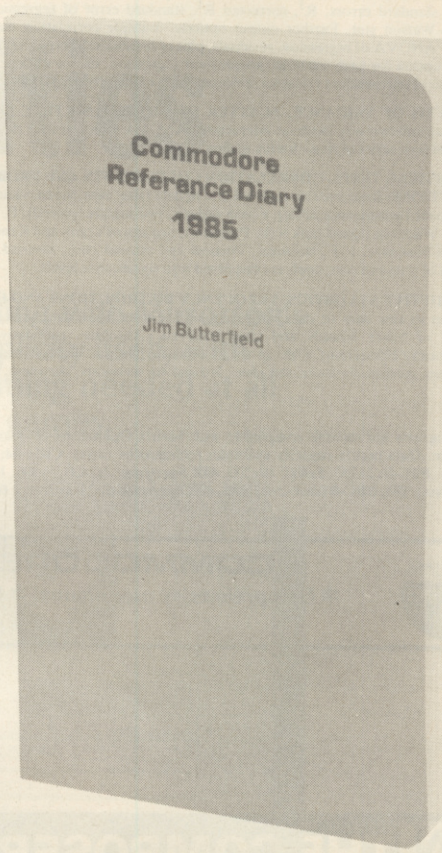

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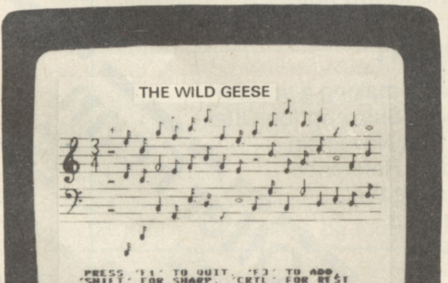
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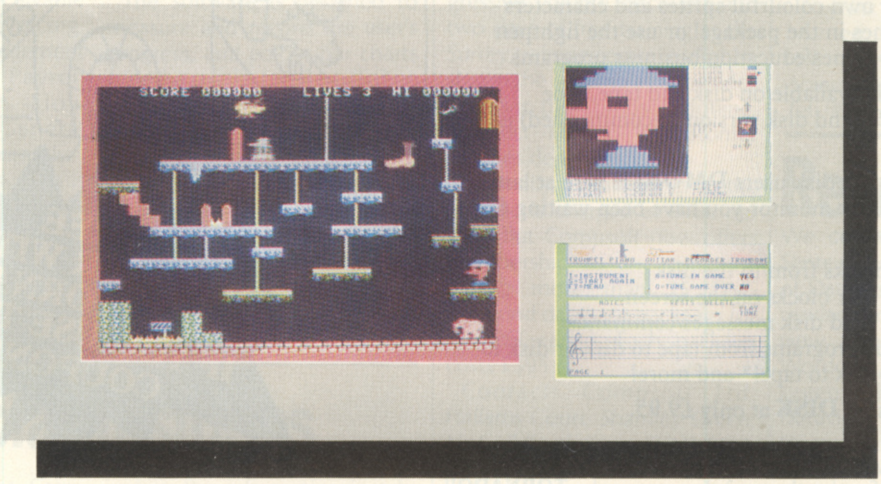
Creative opportunities

Sue Pearce has hours of fun experimenting with Mirrorsoft's Games Creator. The program is simplicity itself, with absolutely no knowledge of programming needed at all to create original colourful games.



Written by the Darling brothers Richard (16) and David (18), Mirrorsoft's Games Creator is based on a compilation of various editors designed to help speed up the games writing process, which the brothers developed while writing many computer games.

User-friendly is definately the key to this package. On-screen instructions and a step-by-step booklet enable you to successfully create your own games. Games Creator includes three ready made games illustrating the different effects you can produce.

All you need to start you off is your 64, the Games Creator (on cassette or disk), cassette recorder or disk drive, television or monitor, a joystick if you choose, and blank cassettes or disks to save your own creations.

Once the program has loaded, the main menu appears on the screen. By moving the flashing cursor (by joystick or cursor keys) you can choose your option: play, change, load or save. If you opt for change you are faced with the further choice of: allien – movement or rules; sound – tune or effects; graphics – scenery or sprites. In any game there are up to eight sprites (moveable objects), each having a number of animations. The sprites are player, player bullet, aliens 1-5, and alienbullet.

The first thing I did was to design me – that is the character that the player controls. Like me you will probably start off by creating something relatively simple (see the photograph above of my creation!) and then get more adventurous as you get to grips with it. The sprite is displayed enlarged on the left of the screen and normal size on the right to give you a clear picture of your results.

You make your own choice of three colours, plus a background colour.
The flashing cursor can be moved around the large sprite in the normal way. Pressing fire or the space bar changes the pixel to the current cursor colour indicated at the side of the screen.

Creating a tune to go with my graphical masterpiece was also great fun and very simple to do. You can create a tune using different length notes and rests totalling up to seven pages in length. If you're not musically minded don't despair. Even if you don't note what a certain note sounds like, by positioning the cursor under the word play and pressing space or fire, the tune will play.

You can also choose from a variety of instruments – trumpet, piano, guitar, recorder and trombone.

I could go on for pages about features of the Games Creator, but the best way to learn is to take a look at it yourslf. At £12.95 for cassette and £15.95 for disk, you really can't go wrong.

Contact: Mirrorsoft, Holborn Circus, London EC1. Tel: 01-822 3913.

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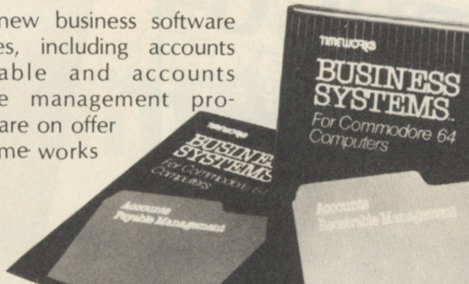
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Accounts Payable Management

Seven new business software packages, including accounts receivable and accounts payable management programs, are on offer from Time works Business Systems of Chicago.

Company President Mark Goldberg says the packages are new, expanded versions that are "faster, more efficient and more versatile than the earlier versions". Costing £59.95 and designed for the 64, the programs are Inventory Management, Sales Analysis Management, Accounts Receivable Management and Invoicing, Accounts Payable Management and Checkwriting, Payroll Management, Cash Flow Management and General Ledger. Each is sold separately.

Goldberg says each system is simple enough to operate without previous computer or accounting knowledge but still provides complete information. Password protection prevents unauthorized access.

The Evelyn Wood Dynamic Reader, also from Timeworks, is a program for improving reading, comprehension, retention and speed. The package was produced under cooperation with Evelyn Wood Reading Dynamics and contains two disks and a user's manual.

The software is designed to measure and record the user's progress, and colour bar charts with the results can be called up onto the screen. Also available for the 64, it retails for £69.95. This one is designed for teens and adults, but a version for younger children will be offered soon.

Contact: Timeworks Inc, 444 Lake Cook Road, Deerfield, IL 60015, USA.

Crucial histories

Investment Research of Cambridge and Lombardy Associates have provided a new financial databank to reveal price histories of shares, currencies and stock market indices at the touch of a 64.

Called IRLA (the initials of the two companies involved), the software is designed to run from January 1981 to date on a floppy disk and the date can be either weekly or daily , depending on what is needed.

As a private or professional investor, you could buy weekly historical data on standard disks for £35 per disk, covering major UK shares, 40 major indices and all 41 of the Financial Times Actuaries Indices, currency rates including cross rates, all UK traded option shares or your own selection of items. A daily data version retails for £65 per disk. All are available for use with the 64.

IRLA also allows you to manipulate the information in tabular or chart form, letting you detect trends over various time periods.

Contact: Lombardy Associates Ltd, 121 High Street, Berkhamstead, Herts HP4 2DJ. Tel: 0442 74247

New forms

Southern Continuous Forms have introduced a new type of continuous stationery called Gilcrest Laid.

Developed in America, the paper allows word processor letterheads to be produced on quality paper similar to that traditionally available in single sheet format. Gilcrest Laid has microperforations on all sides for clean, easy tearing.

Contact: Southern Continuous Forms Ltd, Bellbrook Industrial Estate, Uckfield, East Sussex TN22 1QL. Tel: 0835 61522

Planning ahead

Information managers are invited to a one-day seminar on using business databases for long range and strategic planning.

To be held Friday, 7 December at Novotel London in Hammersmith, the workshop begins with a brief introduction to the procedures, techniques and terminology of planning. Pertinent business databases and the retrieval and analysis of data on various information systems also are on the roster.

The seminar is hosted by Learned Information Ltd of Abingdon and costs £95 plus VAT per person, including lunch. Speakers include Nancy F Hardy, president of Information Enterprises, a company specialising in training seminars for computer users, and Professor Michael Koenig of the School of Library Science and Graduate School of Business at Colombia University in New York City.

Contact: Jean Mulligan, Learned Information (Europe) ltd, Besselsleigh Road, Abingdon, Oxford OX13 6LG. Tel: 0865 730275

Large incentives

Micro database software maker Compsoft is looking for a share of the market in large organisation schemes by offering discount and training incentives.

Companies who enter the Large Organisation Scheme at Compsoft will be entitled to progressive volume discounts and two days of free training at the Surrey training centre. Membership in the scheme also includes access to the Compsoft Hotline, a direct line to a customer services department.

Normally, membership in the scheme is charged at £100 per year, but Compsoft now offers membership to any company buying more than 25 DMS Diamond database packages for the PET range. Each package costs £395.

Contact: Compsoft Ltd, Hallams Court, Shamley Green, Nr Guildford, Surrey GU4 8QZ. Tel: 0483 898545

Rewrite

We correct a misprint in the September issue for the address of Dataview Wordcraft Ltd, the result of a merger between Dataview, a software publisher, and Wordcraft, a word processing system. The correct address is Dataview Wordcraft Ltd, Radix House, East Street, Colchester, Essex CO1 2XB.

Plots to print

datafax
Sakata
SCP-800

Datafax is boasting its new colour printer/plotter as "the first to offer A4 paper handling capability for under £200 RRP.

The Sakata SCP-800, with a 210mm paper roll option, is the first offering from Datafax since it began distributing for the Japanese company Sakata Shokai. It is compatible with both the 64 and the Vic 20. Offering capability for graphics and listings, the SCP-800 prints at 6 or 12 characters per second and allows 13 different graphics commands.

Contact: Datafax Ltd, Datafax House, Bounty Road, Basingstoke, Hants RG21 3BZ. Tel: 0256 464187.

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Commodore connections - choosing an interface

Viola Gienger wades through the quick sand of technical terminology to look at interfaces – What you need to know and what some of your options are

Good connections are something we all wish we had more of and the same applies to computers. Your Commodore just can't get through to many important peripherals without good connections.

In the hardware world, interfaces are your connections and the increasing number of interfaces available on the market offer a wider choice of compatible peripherals such as printers and plotters.

How many times have you found yourself staring at your printer wondering when it will finish its clicking and clacking and let you get on with your work on the computer?

If the waiting game isn't your game, investing in a printer interface buffer may be a wise move.

A buffer cuts down the amount of time your computer is tied up during printing because you simply send your material to the buffer, which holds it and feeds it to the printer at the rate it can accept it. The result – you don't sit around waiting to use your computer and the printing goes on as usual.

Another advantage to having a buffer is that you can opt for a slower printer of better quality without sacrificing your time.

Buying an interface of any sort, however, can be confusing with various companies boasting specifications that often mean very little to the average personal computer user. You may not want to become an expert on polarity, addresses, stop-bits, etc. You just want "one of those".

Avoiding technicalities on this subject is rather difficult, however, and you'll need to be able to make an educated choice when interface shopping.

The reason for having an interface at all is to allow you to use various types of peripherals with your Commodore, although they may not ordinarily be compatible with Commodore machines.

The three major types of connections are IEEE, RS232 and Centronics. An interface, then, could connect IEEE to RS232 or RS232 to Centronics, IEEE to IEEE, etc. One end of the attachment plugs into a port at the back of your Commodore and the other end is attached to the peripheral.

Some interfaces simply change the volt-level between, for example, a VIC 20 and a printer which may have a higher voltage level than the VIC.

Interfaces also run between compatible equipment for different reasons. That is where the buffer comes in. The buffer interface is used as a go-between, so to speak, to accept your input for delivery to the printer.

Your first decision then is what you want the interface to do. Then determine what type of equipment you want to connect and

(continued on page 65)

OMNITRONIX

Hayes
RS-232 PORT
Omnitronix
LO BUSY
BUSY HI
20 HSK
HSK 5
DCE
DTE
VIC-20/C64
DELUXE
RS-232
INTERFACE
COMPUTER USER I/O PORT

A basic volt-level changer, the Deluxe RS232 Interface from Omnitronix is designed for the VIC 20, 64 and SX64.

It plugs into the user input/output port of the computer and allows you to use any RS232 equipment, including serial printers and modems. Equipped with a three-foot cable with a male or female DB25 connector, it also can substitute for the 1011A by adding a printed circuit board. It operates at up to 2400 baud and comes complete with a type-in Basic program and manual. Suggested retail is $39.95.

Contact: Omnitronix Inc., PO Box 43, Mercer Island, Washington 98040. Tel: 206-236-2983.

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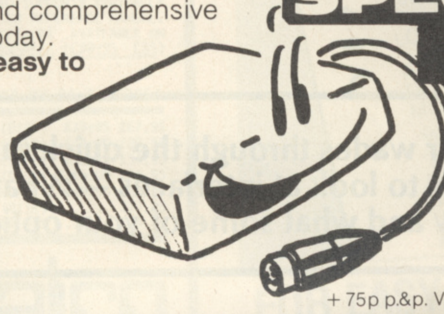

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whether you want a buffer. For that, you'll need to know whether the connections on your hardware are IEEE, RS232 or Centronics, specifications found in your user manual.

From there, you will have a choice of memory size within the interface if it is a printer buffer. This determines how much of what you input can actually be stored at one time. Most buffers come with standard memory sizes such as 16K, 48K or 96K. If you have a 16K buffer, for example, and you try to input 40K, your computer will not be free until the last 16K is in the buffer.

Rod Wellburn of the dealer support division at Commodore's Corby plant says a 16K memory interface will handle about one hour 20 minutes of printer work, depending on the application. A 48K buffer handles up to four hours – quite a timesaver if you rely heavily on a printer. The maximum memory size available is 96K.

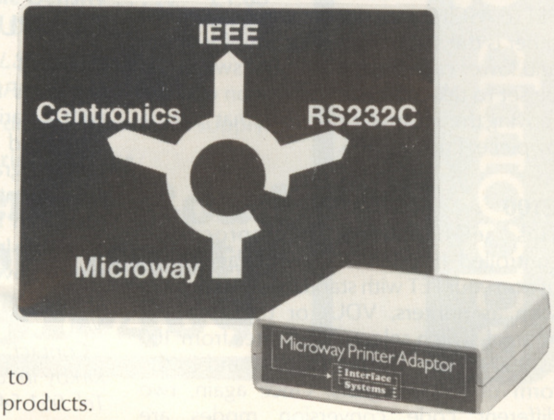
From there, things get more detailed depending on how particular you are about your interface. Manufacturers often give specifications for seven or eight bit data, even or odd parity, serial or parallel interfaces, etc. Your best bet is to consult an experienced dealer or go directly to an interface manufacturer to determine how much any of these variables matters in your particular case.

We have included baud rates for interfaces when available for our descriptions, baud rate determining how quickly your input goes through the interface.

Wellburn says the standard interface drives at 300 baud, allowing about 30 characters per second. But the rates do vary from product to product and, in some cases, you can change the baud rate with an internal or external switch.

INTERFACE SYSTEMS

Printer Interface Adaptors



Interface Systems have launched a low cost range of printer interface adaptors to supplement their printer buffer products.

Called Microway, the adaptors come as RS232C to Centronics, Centronics to RS232C, IEEE to Centronics, IEEE to RS232C and Centronics to IEEE. The range claims to cater for almost any combination of the three major interfaces, saving the cost of expensive hardware modifications for each new peripheral.

The adaptors come buffered or unbuffered and sit between the computer and the printer. Complete with cabling, retail cost is £78.

Printer Interface Buffer

Interface Systems
Printer Interface Buffer
MEP
DC ADAPTOR
INPUT 240V ~ 50Hz
OUTPUT 9V 300mA
MEP WILCO LTD. READING

The Sussex based company also produces an interface buffer, ranging in memory size from 16K to 48K and 96K. Each comes with optional character/escape code conversion and a one year warranty.

The RS232-RS232 allows selectable Baud rates (rates at which material goes through the interface) from 300 to 19200 Baud. Character length, parity and stop bits are selected by an internal switch.

IEEE-IEEE is compatible with all Commodore 2000, 4000 and 8000 series computers and peripherals.

Centronics-Centronics has standard 8 bit data for input and output and offers option of high drive output components among other features.

IEEE-Centronics has the Commodore compatible input interface with a 36 way Centronics plug at the other end. Options include an alternative primary connection.

RS232-Centronics has an RS232-RS232 buffer and acknowledge option on the input interface and acts as a Centronics buffer at the output end.

Centronics-RS232 has the acknowledge function at the input end with an option for it at the output end.

Prices are £140 for 16K buffers, £176 for 48K buffers and £272 for the 96K, excluding packing, posting and VAT. Interface Systems say they are planning full duplex RS232-RS232 and IEEE-RS232 for the future.

Contact: Interface Systems, Interface House, 17 Eversley Road, Bexhill-on-Sea, East Sussex TN40 1HA. Tel: 0424 225683.

DYSON INSTRUMENTS

Scientific interfacing devices are among the variety of interfaces available from Dyson Instruments. The more than 20 different interfaces listed in their catalogue give you the choice of linking with a laboratory instrument, an external logic system, sound synthesiser or a colour printer. Listed here is just a brief survey of a few products.

Digital-Analogue

These are crucial if you want to send your computer's digital signals to a peripheral that "speaks" analogue or vice versa. Dyson produces both D/A and A/D types of interfaces, software controlled, for £75 each. Both offer the user a selection of voltage ranges and in the case of the D/A, the board is fitted with a loudspeaker for synthesised sound.

Link-Up

The Link-Up Bus Management System is a firmware (ROM) package allowing several Commodore micros to be connected to one disk drive and printer for use in the classroom, for example. Called the Inter Pet, it costs £125 and works with the 3000, 4000 and 8000 series Commodores.

Junior Rexagan

For those who want to make a wider use of their Commodore at home, the Junior Rexagan allows the user to adjust it to a variety of uses by modifying the software to meet specific needs. Ray Karrigen of Dyson says the interface is a smaller version of the Rexagan, which has been used, for example, to control lights over a billiard room. The Junior Rexagan is an interfacing teaching tool and, with the correct programming, is a combination of data acquisition system and controller. Conceivably, you could control lighting, heating, even a burglar alarm system through the computer and the JR. Consider the investment, however – £195.

Rexagan

Rexagan will link up to the PET and the VIC 20 and can do several jobs at once because eight signal boards can be slotted in to the master unit at once. You can get a Pulse Counter (£120) which can be used as a clock or the Watchdog (£120) which can ring a bell, cut off power or activate alternative devices if something goes wrong with the computer or the interface. The master unit will mean £240 out of your pocket. Dyson also offers an advanced version of Rexagan, the Super Rexagan.

RS232C

This one is located inside the computer and is compatible with communications systems using modems. At a cost of £175, it enables the Commodore to be used with a wide range of high quality printers. It has a baud rate of 9600 and additional peripherals can be added.

Contact: Dyson Instruments, Sunderland House, Station Road, Hetton, Houghton-Le-Spring, Tyne & Wear DH5 0AT. Tel: 0783 260452.

SMALL SYSTEMS ENGINEERING

B300

An IEEE-488 Serial Interface by Small Systems Engineering Ltd offers 16 different baud rates in the range 50-19,200 baud chosen by the user. The small case of the bidirectional unit has on, listen and talk indicators on the front panel. With a 90 day warranty, the B300 enables the IEEE-488 to connect with serial devices such as KSR terminals, modems, laboratory instruments and other computer systems. The cost is £186 (excl. VAT).

Type GP1 1000

The GP1 is another bidirectional interface from Small Systems, this one capable of buffering up to 59K bytes of input data. By using PET Basic, the user can select baud rates, code conversion and other needs. It works from IEEE-488 to RS232C. Based on a Z80 microprocessor, the GP1 also has a 90 day warranty and costs £475.

A100

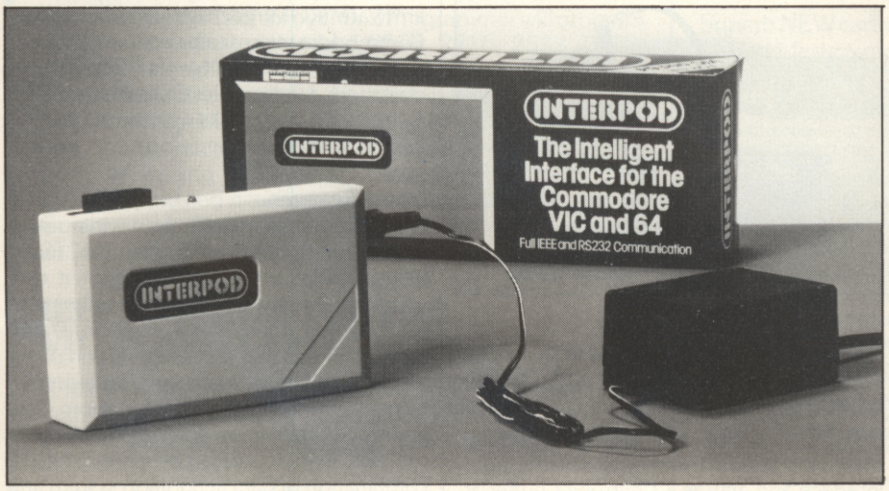
This is an IEEE-488-Centronics/Anadex interface that allows your PET to be used with standard parallel devices such as printers. Of the two code conversion modes, one is PET to ASCII conversion for graphics and the other is the same conversion, but for upper and lower case display. Another switch can be set to take off code conversion entirely, moving the information serially, that is piece by piece. Price is £106.

C100

This self-contained, microprocessor-controlled IEEE-488/RS232 interface is for use on your PET with standard serial devices such as printers, VDUs or teletypes. An internal switch selects baud rates from 100 to 9600 baud. Output is serial and in the form of RS232 signals. Once again, two different code conversion modes are available. Price £120.

Contact: Small Systems Engineering Ltd, 2-4 Canfield Place, London NW6 3BT. Tel: 01-328 7145.

CHEETAH MARKETING


INTERPOD
INTERPOD
INTERPOD
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Full IEEE and RS232 Communication

Interpod

One of the better values on the interface market is the Interpod, now reduced in price to £59.95 (incl. VAT) from £125 by Cheetah Marketing, who acquired the sole marketing and manufacturing rights from Oxford Computer Systems.

Originally made by Parc Electronics, which now owns Cheetah, the Interpod is a multiple interface housing both RS232 and IEEE and is said to be completely compatible with available software. Interpod does not use the 64's cartridge slot so does not reduce the computer's available memory.

The interface allows PET owners to supplement their system with the 64 without concern about printer and disk drive accessibility.

Contact: Cheetah Marketing Ltd, 24 Ray Street, London EC1R 3DJ. Tel: 01-833 4909.

BICC VERO

This company offers a general range of interfaces for RS232, IEEE and Centronics in the form of standard data leads. "D" type data leads connect peripheral equipment to micro, mini and main frame computer systems while a range of parallel data cables are used to interface between printers, word processors and VDU's.

Contact: BICC Vero Connectors Ltd, Parr, St. Helens, Merseyside WA9 1PR. Tel: 0744 34644.

COMPUTAPIX

IEEE-488

Designed for the 64 and VIC 20, it works with a variety of software such as Simon's Basic and Easyscript and all Commodore Easy programs. It is compatible with all IEEE equipment and, in the case of the 64, the code can be entirely relocated within the memory. Including a full 12 months guarantee to cover parts and labour, the cost for interfacing either the VIC 20 is £62.10 (incl. VAT).

Contact: Computapix Ltd, Gores Road, Kirkby Industrial Estate, Liverpool L33 7UA. Tel: 051-547 2741.

INTELLIGENT INTERFACE

SYSCON 6

Intelligent Interfaces has developed the Syscon 6 to connect even more Commodore peripherals to the BBC microcomputer. The new model allows the Commodore 8250 floppy disk unit to be used with the BBC, expanding the range to all Commodore dual floppy disk units and most Commodore dot matrix and daisywheel printers.

Contact: Intelligent Interfaces Ltd, 43B Wood Street, Cooks Alley, Stratford-Upon-Avon, Warwickshire CV37 6JQ. Tel: 0789 296879.

DIGITAL DESIGN AND DEVELOPMENT

The 64 is coming into rather sophisticated use with an interface from London based 3D Ltd.

Designed for professional use and costing £700, the GPIS is no toy. 3D's Alan Mills says one customer is using the interface to connect a 64 with various monitoring systems to record and control conditions in fermentation rigs for biological experiments.

It comes with manual, demonstration diskette and appropriate cabling and acts as a digital to analog or A/D converter with an eight channel digital power driver and eight channel digital input.

Contact: Digital Design and Development Ltd, 18/19 Warren Street, London W1P 5DB. Tel: 01-387 7388.

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```
149 GOSUB1271
150 Q(R1,R2)=4
151 NEXT I
152 A=-1
153 IFP2=1THEN157
154 GOSUB608
155 IFE<=0THEN653
156 GOTO210
157 P2=P2+1
158 :
159 T8=S1-1
160 U=S1+1
161 M=S2-1
162 N=S2+1
163 IFT8<1THENT8=1
164 IFU>10THENU=10
165 IFM<1THENM=1
166 IFN>10THENN=10
167 FOR I=T8 TO U
168 IFJ=0THEN170
169 FOR J=M TO N
170 IFQ(I,J)<>3THEN174
171 C$="DOCKED":POKE53280,1
172 GOSUB1050
173 GOTO183
174 NEXT J
175 NEXT I
176 IFK3>0THEN180
177 IFE<E0*.1THEN182
178 C$="GREEN":POKE53280,5
179 GOTO183
180 C$="RED":POKE53280,2
181 GOTO183
182 C$="YELLOW":POKE53280,7
183 IFA>=0THEN185
184 GOSUB608
185 IFE<=0THEN653
186 IFD(2)>=0THEN190
187 PRINT"SHORT RANGE SENSORS ARE OUT"
188 PRINT
189 GOTO210
190 PRINT"----------------"
191 C0(Q1,Q2)=G(Q1,Q2)
192 FOR I=1 TO 10
193 FOR J=1 TO 10
194 PRINTQ$(Q(I,J))" "
195 NEXT J
196 GOSUB200
197 NEXT I
198 PRINT"----------------"
199 GOTO210
200 IFI=1THENPRINT"STARDATE "INT(T):RETURN
201 IFI=2THENPRINT"CONDITION "C$:RETURN
```

```
202 IFI=3THENPRINT"QUADRANT "Q1"-"Q2:RETURN
203 IFI=4THENPRINT"SECTOR   "S1"-"S2:RETURN
204 IFI=5THENPRINT"ENERGY   "INT(E):RETURN
205 IFI=6THENPRINT"TORPEDOES"P:RETURN
206 IFI=7THENPRINT"KLINGONS "K9:RETURN
207 IFI=8THENPRINT"SHIELDS "Z$","INT(A9):RETURN
208 PRINT
209 RETURN
210 IFN9<>1THEN214
211 GOSUB1101
212 IFN7=1THEN558
213 N9=2
214 PRINT"▣COMMAND :";
215 INPUT#2,A$:PRINT:A=VAL(A$)
216 IFC$<>"DOCKED"THEN218
217 GOSUB1050
218 :
219 IFA>16THEN227
220 IFA<0THEN227
221 IFA>10THEN226
222 IFA=1THENPRINT"]";
223 IFA>5THEN225
224 ON (A+1) GOTO230,158,367,392,434,581
225 ON (A-5) GOTO1153,919,1065,1082,840
226 ON (A-10) GOTO1220,1193,741;816,822,1311
227 PRINT"INVALID COMMAND !"
228 PRINT
229 GOTO210
230 :
231 PRINT"▣COURSE :";
232 INPUT#2,C1$:PRINT:C1=VAL(C1$)
233 IFC1=0THEN210
234 IFC1<1THEN214
235 IFC1>=9THENPRINT"TJ":GOTO231
236 PRINT"WARP FACTOR (0-12) :";
237 INPUT#2,W1$:PRINT:W1=VAL(W1$)
238 IFW1<=0ORW1>12THEN214
239 IFW1<=.25ORD(1)>=0THEN243
240 PRINT"WARP ENGINES ARE DAMAGED, MAXIMUM"
241 PRINT"SPEED = WARP .25"
242 GOTO231
243 C$="MOVING":POKE53280,12
244 GOTO952
245 E=E-W1*C5/4-C5/4
246 IFE<=0THEN653
247 IFW1<.2THEN249
248 W9=RND(1)
249 IFW1=12THEN540
250 :
251 GOSUB608
252 IFN9=1THEN210
253 IFE<=0THEN655
254 FORI=1TO7
```

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Commodore 64 owner wishes to exchange software and tips with CBM users in Europe, USA and Canada (all disk programs). Send list to 15 Mailborough Road, Smethwick, Warley, West Midlands B66 4DN England.

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Commodore 64 user is interested in exchanging ideas with other C64 users anywhere. Please respond. Several programs from games to business; Lots of programs and ideas already available. Looking for more!! Mr D.R. Stracener, 3375 Hwy 234, White City, Oregon 97503. Tel: 503-826-6480 or 779-3818.

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CBM 64 owner wishes to exchange software with a penpal. Contact: Alan Renwick "Marfaux" 4 Langlands Rd., Harwick, Scotland TD9 7EF

Software for sale, titles include Boogaboo, Space Pilot, Bath Time, and others. S.A.E. to Mr A Garrard, 90 Southsea Avenue, Leigh On Sea. Essex. (All tapes).

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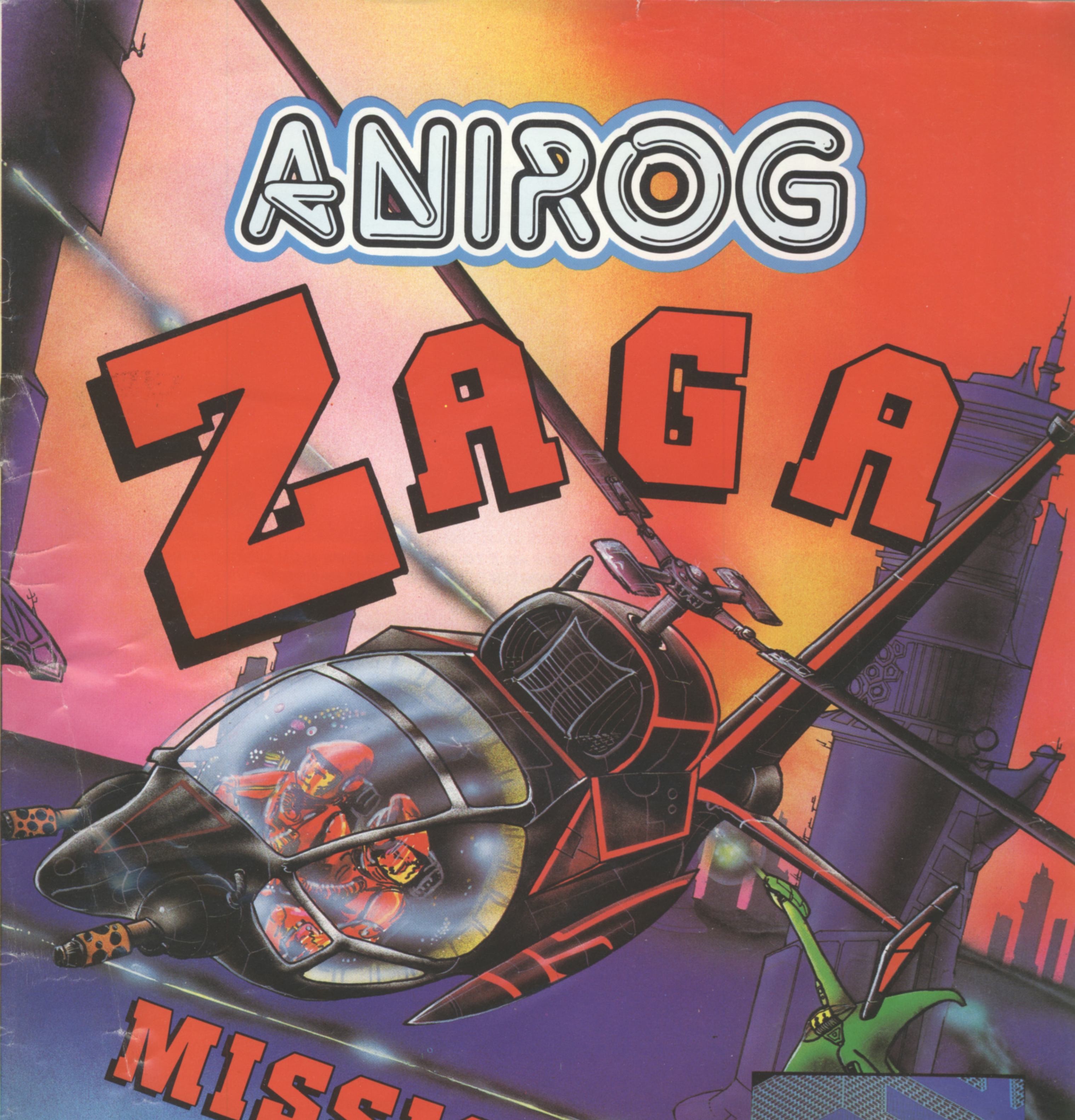

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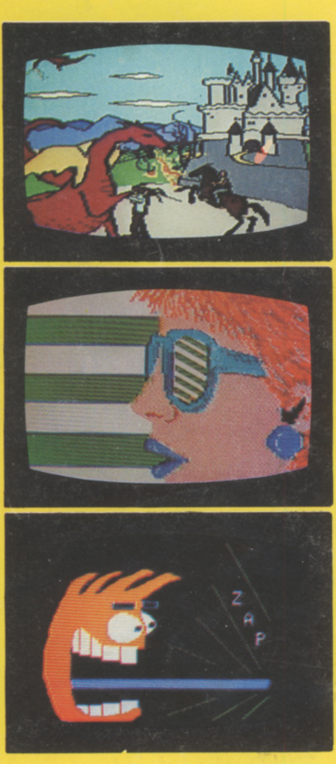

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